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and THE NATION'S HEALTH

Volume 24 October, 1934 Number 10

Public Health Awaits Social Courage*

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SCIENCE in its varied and attractive aspects will be offered to you at this, as in former meetings of our Association, by competent and industrious devotees and contributors. History, prophecy, organization, the progress of our art, former and current triumphs in disease prevention, all have been amply and handsomely dealt with by my predecessors in this honorable office.

It will be my pleasure, even at the risk of yours, to offer you opinions rather than rigorous fact, and to tempt you, if you will let me, to look at the necessity for courage as well as knowledge, for the will-to-do, and, when indicated, the decision not to do, as our people may require. I offer you therefore the title "Public Health Awaits Social Courage."

Our concern is with the use of biological knowledge through the instrument of civil government, and with the authority which this exercises through laws and public education over communities organized voluntarily, and served by their representatives freely chosen. It is the use by man of natural forces, his conquest of other living things for his own security that distinguishes the civilization which we share in today from those that preceded ours, back into the earliest records of human accomplishment.

If the tendency of the succeeding waves of civilization to be of longer duration, and of the intervals of barbarism to be briefer, is to be maintained, it will come about apparently more through increasing wisdom in the control and processes of human life than by the agencies of wealth, and power over material things.

The natural sciences have been harnessed to and by society for generations, but in the more distant past as a means to physical strength and possession, or for the command of the wherewithal of food and shelter, rather than intentionally and specifically to triumph over sickness, to guarantee infant survival, and to enlarge the quantity, and ennoble the quality of human life, by removal of any hindrance to its security. The wisdom and ingenuity of breeders, the skill and trained imagination of horticulturists

* Presidential Address delivered at the First General Session of the American Public Health Association at its Sixty-third Annual Meeting in Pasadena, Calif., September 3, 1934.

have sometimes brought such superabundance of food upon us that national surfeit has been commoner than famine. We actually from time to time find ourselves embarrassed by the paradox of our plenty, and have been occasionally all but smothered by a plethora of sustenance.

It is upon the Department of Health of every political unit of area and population in the modern world that a splendid charge is placed in our trusteeship; guardianship of life for the benefit of each human soul and body within the respective jurisdiction.

From the least, the simple group of village, town or county, up through city, state, and nation, to the culmination of hopeful collaboration over the five continents of the earth through the League of Nations, the duty is the same; the knowledge is identical; only the need and the selective appropriateness of application vary as race, climate, and ways of work create different problems and determine the resources to meet them.

It is not for us to assume an expertness in the economics of production, of transport, exchange, or profitable disposal of that wealth which water and warmth wring from the surface of the earth, nor yet ours the burden to play the rôle of social engineers bent upon ending perennial or periodic poverty. It is enough that we have chosen a way of life, and an arduous preparation to fit us to know how families and communities can accomplish their destinies with least human loss or damage. This we achieve with but uncertain and indifferent success by the art and science we call public health. It is not the biology of agriculture and animal husbandry I would select for discussion today but the use of natural history for the sake of human history which I would persuade you has made romance of contemporary social progress. To quote a philosopher of a hundred years ago "Natural history by itself has no value, it is like a single sex, but marry it to human history and it is poetry." It is this poetry which entrances us and pledges our continuing loyalty to our profession.

It would be as trite as it is tempting to review the triumphs of our nation, of our maelstrom of races, of both sexes and every age, in the steady forward progress of life security within the existence of this Association. Abler presidents than I have raised the applause due to giants of sanitation, to disciples of bacteriology, to patient plodders in personal hygiene. It is enough to recall that progress has been all but continuous, uninterrupted, and cumulative in its pace, reaching a new zenith in these past 5 years of colossal economic confusion, of frustration of finance, of collapse of commerce, of arrest in industry and labor.

Let me rather accompany you into that discipline of mind, and through that humility of spirit which comes from attempting to foresee the future, looking for new triumphs, and seeing in the failures of today a most precious experience for our successors.

If I were challenged to describe the elements necessary to assure further improvement of human health in our associated nations, these three would seem real and pressing: some increase in effective intelligence; something of the spirit of religious devotion even to the point of self-denial in the material possessions and accessories of today's life: and lastly, courage to apply what biology has taught us to believe.

In the matter of raising the general intelligence level a little, our rôle can be only secondary, as of any other professional group. That shrewd historian, Kirsopp Lake, observed "If the general intelligence rate rises even a fraction of one per cent, that rise constitutes a revolution in social condi-

tions." It would indeed be evidence that no mean fraction had been gained if tradition, superstition, a certain herd or sheep-mindedness of our people were replaced by reasoning based on objective observation of fact, and by a habit of thought which leads to controlled experiment for answers.

The Moro warrior who asks to be vaccinated because he sees his children saved from smallpox, the South Sea Islander who crowds the clinic to experience the miracle of arsenical treatment for yaws, has from the biological point of view attained a level of intelligence far beyond that of the silly thousands of our fellow citizens who trust their pseudo-consciences rather than the doctor's brain, their religious creed instead of nature's evidence.

Our part in lifting the intelligence level will always be a modest one, but we can none the less add a bit to the pressure upward. We can speak with reverent honesty of the truths of life so that there will be utter and consistent trust in our facts, in our reasoning, and in the certainty of our conclusions.

Better silence and patience than the glib inaccuracy of prolific popular promoters.

It is a very present need that half-truths, however popular, do not appear in health bulletins, that none but modest claims be made for prevention or treatment of disease. Rather let the application of a new truth lag by months behind the record of successful experiment than have to excuse the falsehood of a premature publicity about some uncorroborated claim of discovery. Intelligence levels will never rise while the spoon-fed multitude is persuaded out of its earnings by specious and deceptive advertising.

Complacant acceptance of obviously false claims of healthfulness for foods, drugs, soaps, cigarettes, candies, cough drops, illuminated milk, ice, bread, and porridges, challenges our standard of truthful education in the community. No health officer or agent, however humble, is doing his or her share in blocking error and stimulating critical thought and useful action, if he does not use his public authority to refute the false claims of advertisers of foods and drugs, and a multitude of pseudo-health contraptions. I see no excuse for temporizing with the advertiser when his sales talk is in direct or implied opposition to fact. The society that trusts you to protect it against bacteria and their vectors will support you when you raise your voice and use your powers to frustrate that most noisome of human insects, the man who sells his goods on a false fear of illness or on a futile hope of health.

Even if the Tugwell Bill, a splendid gesture for new liberty of the consumer from food and drug abuse, did not this time become law, at least the State of New York has found it possible to levy upon an industry and the taxpayer to advertise the high worth of a precious product. New Yorkers are investing half a million dollars in governmental advertising of milk, an innovation in functions of state government which might well extend to other essentials so that car cards and radio nonsense may be shamed, or replaced by simple truth. Better emphasize the good than enter controversy with the vicious, but let us at least be not indifferent to error and deceit in the marketing and advertising of foods and drugs.

It is not the authority of the law, nor new knowledge, nor efficient organization, nor even money that is needed, but opinions based on fact, ideas grown in reason, concepts, declarations of independence from the trammels of outworn tradition, of abusive repetition of all too common customs, that will lift intelligence levels and force the salesman and advertiser to be truthful, and to that extent honest.

Power of publicity, of free access to

the eyes and ears of the thoughtless multitude, if divorced from a sense of responsibility to the consumer, to the group, to the social order, is as great a menace as polluted water or unpasteurized milk.

As to self-denial, even to some extent a religious or emotional devotion or self-sacrifice, let me express a personal preference for attaining our objectives rather by going without some things than by "go-getting" everything to be had. A natural practical philosophy of the pioneer, of the pampered pupil of plenty, is spending oneself into perpetual prosperity. Perhaps this has been a safe, successful and useful principle of personal and public conduct in the infantile, the immature period of rapidly expanding population, with immigrant and birth rates both high. With today's ageing population, with the largest state population already showing an annual loss among its native born population of one-half of one per cent, an increasing discrepancy between production of wealth and its expenditure for the lengthening education and maturity of youth, and for an increasing span of age and decrepitude, will force us to a choice between sacrificing some of our accessory, costly but superfluous and unnecessary expenditures, or abandoning our investments in health and culture.

Taking only 5 major items of individual expenditure, wholly within the choice of each of us to forego, to reduce, or wholly to omit, and recognizing that no one of these objects or costs contributes to any material degree, if in fact at all, to the personal or racial health or benefit of our people, we find that approximately 9 billion dollars are spent annually in this country for tea, coffee, tobacco, alcohol, and cosmetics (including services). It is not that I would condemn these expenditures as vicious, sinful, or wasteful, but that, as between the satisfactions they bring to the spender, and those which half this cost would bring if devoted to investment in the use of applied biology to human health, there is a lack of a sense of proportion, of intelligent choice, and thrifty discrimination.

We cannot now or in the reasonably predictable future have all the purchasable accessories at our tables, each contrivance for physical convenience in our homes, the latest speeds for individual transportation, the problematical delights of universal intercommunication, and also command the facilities, the personal services, the benefits in home and work of that use of natural science in the everyday life of work and play, profit and pleasure, which public health in its broadest sense can bring to a certain fruition.

The greatest effectual block against the minimum essential, the moderate but desirable, and the optimum advantageous expenditure by individuals and the community for personal and public health, is not ignorance, not politics, not religious or antisocial antagonism, but the competition of commercial advertising, the pressure of personal pleasures for the cash in the consumer's pocketbook, the inertia of spending habits.

To meet this competition is needed, not more advertising, not an increase in competitive promotion of services and products, but a serious will to attain the more enduring satisfactions, the deeper securities of life, the necessities of cleanliness, nutrition, recreation, leisure upon which a more rational way of life can be based.

If a per capita annual expenditure of $72 has been by habit, inclination, and commercial persuasion, saddled upon our people for dietary drugs, for the brief comforts of taste and smell, for the evanescent mask of painted pulchritude, a moderate self-denial would permit enough diversion of funds to finance

the most ambitious scale of expenditure for personal and public health which the imagination and proposals of competent persons has yet expressed.

I see no likelihood of new money being freed for constructive social and cultural progress otherwise than by going without some of the current self-indulgence, and furthermore in such modest self-restraint for health there would be a distinct contribution to that still intangible and distant hope, better mental health.

It is by self-control and self-restraint that man is chiefly distinguished from the brute. Reduction in the use of dietary drugs, in the facile deception of an imitation of honest loveliness would of themselves add a stronger quality to contemporary behavior.

I would not particularly emphasize the leading rôle only of these 5 unproductive objects of common expense, but more that gluttony in foods, waste in the fallacies of the shifting fancies, and a general slovenliness and unthriftiness among our people readily account for sums which in some Utopian existence might be diverted to the luxury of health.

If we would grow, progress, and truly enjoy the precious treasures of life, we will doubtless find it necessary to choose between these and the flitting accessories of an artificially desirable manner of life. If security, beauty, leisure to think, and to add to the durable satisfactions of life, are our choice, we shall attain them only by voluntary and determined sacrifice of what Plato called the appetitive forms of desire. After all, individual choice and the use of it is the distinction between a culture, a government, a society of tradition or slavery, and one with the ambitions of those democracies which our Association represents.

Self-denial in small things would be a good promise of achievement of communal restraint in great affairs.

How can we expect to abandon war as a social debauch, a mass anesthetic, a moral depressant, really an exhilaration of formally approved violence and murder, if we have not learned to live our individual lives without the aid of drugs?

Let us also practise self-denial by refraining from the use of fear as a motive of self-protection, of personal conduct, and personal hygiene. Avoid threats of disease as arguments for good conduct. Use instead appeals to intelligence, and worthy use of the body and its life as entrusted to us. Let us deny ourselves the emotional indulgence of campaigns against non-essentials. Distinguish between the annoyance of noise, the unesthetic effect of untidiness, and the violence to health and safety in gluttony, self-drugging, and over-crowding. Let us get worked up over spitting, but leave litter abatement to housekeepers. Lend a sympathetic ear to those who believe their irritability results from other people's noise, but raise particular hob if any privy is unsanitary. Hold to the course of essential sanitation before sharing with those who fuss over outdoor dustiness and smells and robust racket.

As to the last of my suggested trio of collaborators for an ampler national health; courage to invent, to test, to apply; courage of society to demand those services which science is ready to perform; let me remind you of a phrase from his *History of Civilization* by the pre-Victorian historian, Buckle, " The great enemy of knowledge is not error but inertness. All that we want is discussion and then we are sure to do well no matter what our blunders may be "; and again, " The progress of civilization varies directly as ' skepticism ' the disposition to doubt and investigate, and inversely as ' credulity ' or the ' protective spirit ' a disposition to maintain,

without examination established beliefs and practices."

For a stepping up of general intelligence our part though honorable must be indirect and very modest.

To develop a spirit of self-denial in small matters for the sake of great we can help by judicious exposition of the stock in trade of the medical sciences, and by our own example.

But in the matter of social courage for new health levels ours must be the vision, ours the leadership and the challenge of events.

Among a multitude of opportunities to play our own immediate part in the march upon social inertia or cowardice, I have selected several examples.

CLEANLINESS

First in order of sanitary and general social importance for all our populations outside of ordered cities is the age old problem of man's soiling of the surface of the earth. In great areas and for large population groups in the United States proper, more than half of the permanent homes are so equipped and conducted as to preclude the possibility of the most elementary form of personal cleanliness. Until man has so emerged from the level of the beast that he has learned not to make his own shelter, his garden patch, his dooryard, the pathway to and from his work, a source of continuous pollution of his and his family's food, feet, and water, he cannot be considered to have started on the climb to social security. That state and county is a rarity whose health officer can with knowledge and conviction claim that all living, working, school, play, and travel premises within his jurisdiction have such disposal of human waste as meets the simple necessities of decency and cleanliness, or can point to records of sickness and deaths free from those known to be due—and to be due solely—to transfer of feces to food.

It is not that we fail to record the triumphs of cholera control, of typhoid abatement, of great reduction in the diarrheal diseases of the young wherever the sanitary engineer has served the governments of cities. Nor is there reason to be ashamed of the past few decades of effort against parasitic infestations in rural areas of our continental and insular possessions. What should be obvious, but appears to me to be shockingly neglected, is that such a fundamental responsibility of our profession is but partially met. Satisfied with the easy success of sewer systems for the city and town we have passed on in cheerful confidence to other needs of congested centers. We cannot consider ourselves a civilized nation, nor imagine that we have attained even the safety of the Indian nomad with his shifting tepee, until each settlement, shack, house, or place of human habitation and use is so equipped that family and friends, guests, laborers, and travellers can meet the calls of nature without soiling the spot of land they occupy with infecting and infesting organisms. In this generation of frank expression, when few reticences remain of body or mind, of thought or act, let us be Elizabethan in the directness of our language, and insist that the sanitary privy be built before the house is occupied, and that taxes be not levied on any man too poor to build one for his own family.

We have travelled far from the inception of our public school system, when in the State of New York less than half of the schools had any provision whatever for the body wastes of children and teacher. And yet today it is true that even where chromium plated plumbing dazzles the eye and burdens the taxpayer, there are lacking the easy and practical conveniences for washing hands in most of our school buildings. Let boards of trade, chambers of commerce, local newspapers, the churches,

school boards, county supervisors advertise the need and the ambition to have their particular community recorded officially by local and state departments of health as having no home or place of human activity without sanitary privy and closely accessible water and soap. Let children learn in the nursery and school that health begins with cleaning their bodies for their own safety, and of washing their hands for the sake of others.

Here is a challenge to resourceful publicists, for those who prefer weasel words, to such as Chaucer used, a worthy object of campaigns, slogans, drives, and the like. We can point to a spiritual as well as a physical exaltation for the village which achieves a sanitary privy for every home. Let the city health officer advertise the amount of sickness, even in his well sewered community, which can be proved to be due to immediate or remote infection and infestation from bowel to mouth. There is hardly a Porto Rican of the 45,000 served chiefly by our free hospitals and clinics in New York, or a rural laborer from the South to Detroit's automobile factories who does not travel and live a walking museum of potential disease because of insanitary home conditions and personal habits. And the same can be said of other unfavored groups whether white, Negro, Filipino or Japanese. The safest place for these people is of course the modern city with its plumbing and its abundant water. But turn the city dweller into a hitch-hiker, into summer camper, into boarder, traveller, searcher for work, or back-to-the-lander, and he faces the eternal, the first necessity for health, decent disposal of his own body detritus with cleanliness to himself and safety to others. What is axiomatic soon develops social inertia, and it is something akin to this indifference that makes a people more devoted to the enameling of finger nails, and the creasing of trousers than to the sanitary privy as a mark of social distinction. I should not wish any city or county or state to be permitted to compete for health distinction from the A.P.H.A. unless the health officer presented responsible evidence that within his jurisdiction no one lacked means of preventing soil and hand pollution.

The era of environmental sanitation began something that has not been finished. Around the world man's filth remains his health's greatest enemy especially where, as in large areas of the Orient, his necessity for food depends on the fertilization of his crops with human manure. With more than half the people in some of our southern states living at a sanitary level no higher than that of the domestic animals, it will take more than routine public health effort to clean up the mess that man's necessity has created. The cattle in many a certified dairy farm live under a technic of routine cleanliness superior in orderliness and esthetics, as in sanitation, to that in vogue among a large remaining fraction of our population which carries on in fact a hand to mouth existence in filth. I would not quarrel with colleagues who fear the running nose more than the running bowel, and it is a matter of some satisfaction that the peak of deaths and sickness has been shifted from midsummer, and lesions below the diaphragm, to midwinter and spring and the respiratory tract, but I urge upon you serious and sustained reconsideration of the problem of sanitation of fecal disposal as a major unfinished job for which ingenuity and determination, rather than more research or authority are needed.

SYPHILIS

Second only if at all in demand for courage is the pressure of conscience, of science itself, of past and present neglect, to make a frontal attack on

syphilis. Five hundred years of occidental acquaintance with this disease, precise and voluminous knowledge of its clinical manifestations, adequate and exact information as to specific diagnosis and cure, widespread and increasingly competent records of prevalence, universal conviction as to its devastating effects on families as well as individuals, powerful authority and generous voluntary assistance for control and education—these and a multitude of other factors crowd upon us as reasons to hope for, and to promise ourselves, the great achievement of washing the human race clean of pollution. If and when this is done we shall have added years to life expectancy, assured the birth of the wanted child, and created large vacancies in hospitals and asylums.

How can it be that in this instance our knowledge is largely sterile, our ambition thwarted, our strategy weak, the logic of our public conduct confused by traditional reticence. We have done almost everything except make an intelligent and consistent use of our present knowledge. Human instinct we have explained and emphasized, but in no respect altered. Character in youth we have tried to bend and mold to finer proportions and more unselfish ends, with but slight success. Social customs and the exploitations of commerce we have sought to alter or forbid by local and national law, and the power of the League of Nations, with but vacillating response from peoples and governments

From babyhood to parenthood we have tempted curiosity to satisfy its craving through a newer, franker knowledge of life processes in flower, insect, pet, and human family. Euphemisms we have used in lecture, screen, and public print to save the blush of guilt or innocence and still patients and the reading public know little of the facts of origin, means of transmission, and course of the communicable disease syphilis. We have hinted, and hidden, and yet hoped for results; and still this malign infection flows almost unrestrained through marriage as through brothel, in childhood, in maturity, and in age. It is of little moment that here and now you should be assailed by figures of incidence and death, by estimates, percentages and rates, by probable errors or significant differences; it is enough to have graven in your minds, ever present in your thoughts, ready for argument and action, that syphilis is the most prevalent communicable disease, and one for the prevention of which we are doing the least, although we have a reservoir of knowledge for instant practical use greater than that for combating any other disease, unless it be diphtheria, or malaria, or hookworm infestation.

We do not know in any substantial number of cases the time, place, source, or manner of infection. We do not know, except in a small number of persons, the presence of the disease at its onset. When we do learn this we fail to use reasonable resourcefulness to discover the person and conditions responsible for the case just reported. We allow patients known to be in the communicable and uncured stages of the disease to escape from supervision in enormous numbers from every syphilis treatment office or institution in this country.

We have no proof that any material reduction in general incidence has resulted from the past 20 years of increasing attention to syphilis as a social and health problem, although in groups of men under military discipline and among students wisely guided by college health services remarkable reductions in occurrence of the disease have been recorded. We know that so small an incidence as two-tenths of one per cent of syphilitic infection is to be found in selected groups of young men and women of university caliber, and that syphilis exists in recognizable form in

as high as 37 per cent of rural white and Negro populations of some southern states. Is it safe, is it compatible with the ambition of our day that there should be any such inequality in disease prevalence in any country where public education is supposed to be the right of every child, and protection of the people's health the first duty of statesmen?

The habits of a large proportion of our people, the insistent pressure of commercialized prostitution aided by the greed of landlords, corruption of courts, and connivance of police, the biological urges of the animal in man and woman, combine to make the problem one of extraordinary difficulty; but the answer would appear to be a direct medical and sanitary attack, so reasonable, so logical, and so sustained as to rouse the public in support, and to challenge today's society to a courageous consideration of human values and prevailing liberties of conduct. What has been accomplished in control of other communicable diseases of man by determined use of medical knowledge can and must be done with syphilis or we are unworthy of our predecessors.

MARRIAGE COUNSELLING

Closely related to the problem of syphilis which is primarily one for physicians, sanitarians, nurses, and educators to solve is that of a health service for marriage advice, primarily in the social interest of family security, but inseparable from medical, legal, and educational implications.

From the early, much criticised, highly controversial, sometimes legally interdicted efforts to translate into common usage by married women and their husbands, through offices or clinics, frankly contraceptive information, by persons of medical or less competent qualifications, there has been abroad and in the United States a steady growth in the understanding of the useful functions such agencies might serve, the social and educational, and preventive medical concern they have for a mature society, and the auspices under which they may safely be operated.

Since the origin of marriage counselling in 1922 under public control in Vienna, the German speaking countries of Europe have developed a total of 1,100 such centers, of which 900 are under private auspices. The first official bureau was opened in Berlin in 1926; Switzerland opened official marriage advice bureaus in Zurich in 1931 and Basle in 1933. Approximately three-quarters of those who come for advice are concerned with problems of sterility, contraception, therapeutic abortion, and medical conditions contraindicating pregnancy; the majority of the remainder seeking information on questions of inheritable and congenital defect and disease, where mental abnormality, tuberculosis and syphilis exist or are suspected in the family; and a substantial number are concerned with the physiology and pathology of sex adjustment, before and during wedlock. These stations are under some appropriate legally recognized religious, health, educational, or other professional auspices such as we are familiar with in the origin and promotion of prenatal, baby health, tuberculosis, and venereal disease clinics in this country.

In Germany, the school physician is usually in charge and acts as the key person and intermediary between the various medical and social agencies called upon for services. In addition to the official municipal centers, numbering about 200, sickness insurance funds operate a considerable number of marriage advice stations, but most of them are under private auspices, and are supported largely on a service basis by membership fees. On the whole, applicants to these centers are from among the working classes who are unable to pay large fees for diversified services.

Departments of health in many of

the smaller cities (Dresden, Lübeck, Hamburg, Lenz) coöperate with the local sickness insurance funds in operating these centers.

In Freiburg in such a bureau in the Woman's Hospital connected with the University Medical School, advice is given to Roman Catholic and Protestant patients by the same physician, but at different sessions, to permit appropriate collaboration of the priests of the respective churches.

Under Roman Catholic Church auspices women's groups have 50 such centers scattered about Germany. The Protestants have 13, and the Jewish women 2, the applicants in all such centers being directed when necessary to other agencies for medical, legal, and social guidance.

The clientele of these stations falls into three major categories: those seeking advice on premarital problems, those planning marriages, and concerned with uncertainties and difficulties related to child bearing in marriage, and those asking counsel on sex and other problems in and out of wedlock.

The greatest service of the agencies at present operating in the large and small cities of the United States, aside from their contribution to competent professional education in contraception, is that of preventive medicine in the field of venereal disease and pelvic cancer. Seventy of these stations for marriage advice are in 7 of the large cities: New York 25, Los Angeles 12, Chicago 10, San Francisco 9, Philadelphia 6, Cleveland 4, Cincinnati 4, 1 each in 20 cities in the East, 22 in mid-western cities, 9 in west coast cities and, 13 in southern cities.

There are in the United States at present 132 bureaus or agency activities devoted to some or all phases of marriage counselling, contributing directly toward better mental attitudes, avoidance of psychoses and neuroses arising out of maladjustment of ideas and experiences before or during marriage. They also contribute to an honest, clean, and competent knowledge by husbands and wives of technics, procedures, and materials by the use of which choice as to the occurrence and intervals of pregnancy may be exercised, and the mother and family be spared some threatened invalidism. Twenty of these are operated by departments of public health; 25 are in hospitals; 12 do not wish their addresses made public.

European practice provides not only for official sanction but for attendance and service of representatives of three professions, the medical, the legal, and that of social work, each of which has been found necessary to meet the complexes of needs, fears, hopes, and catastrophes which are brought by the voluntary applicants for advice and assistance. Whatever may be one's intuitive, traditional, social, religious, or medical preference in the use of contraceptive information as a proper application of knowledge for the protection and integrity of the family, and to reduce the evidence of inherited and congenital disease and defect, the almost universal familiarity with half-truths on this subject, and the evident effect of their wide application in the falling birth rate make it incumbent upon physicians and health officers to familiarize themselves with organized efforts in this direction at home and abroad.

Furthermore, it would seem to me that rather than allow a disorderly, amateur, and more or less irresponsible development of marriage advice stations to grow, as is the present tendency in the United States, outside of official or organized professional control, it would be well for health officers to confer with the hospitals, medical schools, out-patient and social agencies of their communities to the end that a collaboration of these elements may come about without violence to the susceptibilities

of any church or social group which may hesitate as yet to lend its influence and approval.

There is no more suitable public agency than a hospital or a health department through which the combined services of medicine and social science can be made available to that portion of the public which cannot obtain, through professional channels of independent choice, the information and advice they need.

This is not a matter of choice to be determined by liberal or conservative attitude of mind, nor yet one to be settled on the basis of religious belief, but a question of exact information as to a way of life and adjustment between partners in marriage which is possessed primarily by persons trained in the biological and medical sciences. Preventive medicine of the kind every competent physician is daily concerned with includes advice prior to and during marriage, upon which physical, mental, and emotional health in the home may well depend. So far as preventive medicine is concerned, to be effective otherwise than through the private practitioner of medicine, it will in all probability be practised through the hospitals and health departments. I believe that a suitable outgrowth of the prenatal clinic or conference, and of the baby station as at present conducted by official and volunteer health agencies will be a marriage advice office or conference for men and women, single and married. For our needs at present in this country a physician, nurse, and social worker especially prepared for such a responsibility will be required at each such station.

Both mental hygiene and social hygiene, as these terms are used in our countries, should benefit by the official inclusion of a marriage advice service under the health department or in connection with the outpatient service of a general hospital.

This innovation will require some social initiative, imagination, and courage, in all of which it should be expected that the health officer should share or actually lead.

ALCOHOL

And now for another challenge for the social courage of health workers. Twenty years ago the health department of the City of New York availed itself of its good standing in the community to call to the attention of the public that among the frequent causes of death and disease was the beverage use of alcohol. The pamphlets issued at that time and the abstracts of scientific contributions on the subject were well received, widely copied and quoted. The declaration of public policy formulated in February, 1916, seems appropriate to quote here.

THE HEALTH DEPARTMENT'S ATTITUDE TOWARDS ALCOHOL

On June 29, 1915, at the request of Dr. Goldwater, then the Commissioner of Health, a committee of leading physicians, actuaries, educators, publicists, and others interested in the alcohol question, met to advise with the officers of the health department as to the most effective method of preventing such disease as alcohol causes or to which it contributes.

The opinions expressed by the committee and the information in the hands of the department of health, as to the part played by alcohol in causing sickness and death, justified the entrance of the Department of Health into a field previously occupied chiefly by moralists rather than physicians.

Just as the control of venereal disease is a technical matter rather than a question of individual or community morals, so the knowledge of the serious effects of the use of alcohol is to be spread by education. As a measure of personal health and public preparedness against preventable disease and disability, this question should be approached from the medical and social point of view and not from that of morality and religion.

Admitting that the drunkard is a social misfit, our interest is rather with those users of alcohol who do not become irresponsible or guilty of antisocial acts. Such individuals are almost always ignorant of the fact that

alcohol decreases resistance to infectious diseases, such as tuberculosis and pneumonia. Alcohol is a depressant and not a stimulant; it drugs the brain and drops the capacity of the nervous system to obey the will. In this way the use of alcohol becomes an important factor in industrial accidents. Entirely aside from its action as a contributory cause in infectious diseases and industrial accidents, the intemperate or continued use of alcohol causes well recognized degenerative diseases.

The Department of Health has no sympathy with and will take no part in legislative or police restrictions or attempts to limit personal liberty in the use of alcoholic beverages. The spread of accurate information among the people as to the effects of alcohol can be depended upon to accomplish more than laws restricting its manufacture or sale.

In the long run, compulsory prohibition will not prohibit until the public is ready to cease using alcohol, at which time restrictive laws will be superfluous.—*Weekly Bull.*, New York City Heath Dept., Feb. 19, 1916.

In view of the events of the past 15 years in the United States there is something almost prophetic in this official statement of 18 years ago.

At the Washington meeting of the American Public Health Association in 1917 and at the Cincinnati meeting in 1926 I ventured to present what I believed to be some of the reasons why the beverage use of alcohol should be considered a major problem of public health. In this opinion I had the support of that great educator, President Eliot of Harvard, and such authorities as Sir Arthur Newsholme and Sir George Newman of England. For these and other perhaps more compelling reasons of evidence and conviction I take this third opportunity to emphasize the importance of a rational scientific attitude toward the use of alcoholic drinks which I believe should be formulated and expressed by the official health agencies of this country. This appears to me of particular importance at this time, now that we have passed through more than a decade of political chicanery in attempts to enforce national prohibition, venal misconstruction of fact in the public press, and a debauching of governments by the liquor interests, and have returned to practically unlimited accessibility of alcohol of all strengths to all persons willing and with the money to buy. May I further emphasize the advisability of having any attitude or formulation of public policy, or efforts to educate the general public, in the actual and potential dangers of beverage alcohol, established by public and official rather than by volunteer or private health agencies.

It is not that I would draw a distinction between the Women's Christian Temperance Union or the Anti-Saloon League and the educational obligations of health departments; but rather to call your attention to the nonperformance, the paralysis of interest, the consistent and well sustained aphasia of every national health agency on the subject of alcohol from the date of passage of the Eighteenth Amendment. The public of the United States cannot trust its nonofficial health agencies to guide them in the implications of alcohol as a cause of preventable disease and death in the face of powerful commercial selfishness, or when a particular health topic runs counter to the advertising interests of the public press.

It must be recalled that no one of the always influential and usually generously supported volunteer agencies composing the National Health Council has uttered a word of warning, contributed any substantial information or advice as to health implications of alcohol use, or published a report of new facts and observations of a scientific nature on the subject of beverage alcohol or its effect on human life, since 1920.

Even though the public pronouncements and presidential addresses of the American Social Hygiene Association had, prior to federal prohibition, on

occasion declared the well known and intimate causal or contributory rôle of alcohol in the development of venereal infection through commercialized prostitution, no suggestion has appeared from this association in the past 10 years and more, that there is any special hazard to youth in its recreation or pastimes from the use of alcohol, and yet in this period there was the most flagrant abuse of law and a widespread return of casual and clandestine immorality, developed and encouraged largely by illegal sale of liquor.

Also, the National Committee for Mental Hygiene suddenly became silent on the subject of the damage of this selective brain poison to human mentality, emotions, and behavior, and as a cause of functional nervous and psychic disorders, even though the great and technical leader of the mental hygiene movement, Dr. Thomas Salmon, had publicly declared that all the other mental disorders combined, as found among drivers of automobiles, did not equal in frequency or significance those caused by the use of alcohol. The national health agency which has preempted the field of preventable, toxic, hereditary, and infectious mental disorders for its own, has given no sign of awareness that alcohol was the cause of from 4 to 10 per cent of all new admissions to state hospitals for mental disease, such incidence varying with the alcohol consumption of various racial and economic groups. Certainly the fear of unpopularity acted as a depressant and inhibitor of the will-to-do in this agency, much as the drug alcohol does in the individual.

And again the National Tuberculosis Association, concerned necessarily with the economic and nutritional hazards of the wage earner and his family, as these affect the incidence or activity of tuberculous infection, has failed to make any single contribution to public education on the hazards of alcohol as an article of diet for old or young, since the daily press turned thumbs-down on sumptuary legislation and encouraged the use of their columns for the deceptive publicity of liquor dealers, and for the encouragement of liquor users.

And lastly the American Child Health Association joined its sister societies in a common silence, not even raising its voice when legalized beer was again temptingly spread upon the advertising pages of our daily press as a sovereign remedy, a wholesome food for nursing mothers, and a suitable daily ration for children of any age. One almost looked expectantly for some word of praise of the rum ration said to have saved the lives of Canada's most recent quintuplets.

These national health agencies always had money for more and better central organization, for the public self-esteem that precedes the annual fund raising, but never a penny to pay for teaching the medical facts about the most widely used, but most harmful drug included in the dietary of modern occidental peoples.

Plainly, if and when conviction that alcohol constitutes a health hazard, more directly under man's own control to prevent than any other of equal significance, and determination to describe its effects in terms of sickness and death, are arrived at among professional health workers, it must be to public health officers supported by the tax payers, not private agencies sensitive to the wishes of a subscribing clientele that we must look for initiative and courage.

What Schmiedeberg and Kraepelin taught in 1883, what Cushny and Bastedo have written and described since 1900, what Benedict, Dodge and Miles have disclosed with exquisite experimental exactness in the past decade will be found accurately written in Emil Bogen's school book for the Department of Education of Los Angeles. It were

a pity that in this respect the public's physician, the health officer who speaks from the highest pulpit of health publicity, should linger still behind the knowledge of the school child in accurate unbiased information and opinion.

Here again if you have convictions bred of knowledge, then have courage to express yourselves for the public's sake. If you are uninformed in the matter, teachers of pharmacology and toxicology are available in every medical school in the land to enlighten you.

DIABETES

A further problem faces us, born it seems to me of the wealth, abundance, and transformation of man's life from one of bodily labor to that of command over machinery. I refer to that disease which has been for two score years and more increasing in incidence and mortality with astonishing uniformity among all classes of the population, in every state, and among both rural and urban dwellers. I refer to diabetes mellitus, recognized in the earliest records of Greek medicine, understood thoroughly on the basis of modern knowledge of body function and food uses, probably in the great mass of instances preventable, and yet to date not included within the concern of any health department except in the form of controversial statistics.

The small fraction of cases of diabetes which can reasonably be attributed to hereditary defect of the structure or function of the pancreas is probably on the increase, owing to the skill of physicians and the discoveries of laboratory workers who save the child diabetic to survive into parenthood, and carry an adult diabetic through the years of procreation, and yet we have no sufficient justification for interfering by law or persuasion with the marriage and child-bearing of those with this inherent defect. There remains the vast majority of adult diabetics whose manner of life is the major if not the only factor in the development of the disease. The obese, the sedentary, persons of the later decades of life who by occupation and inclination avoid so far as possible, even in their amusement, and games, such exercise of the great mass of body muscles as in the past was necessary for almost anyone, these are the victims of a way of life in which appetite and easy access to abundance in variety and amount of food, and but slight necessity for bodily exertion, are the rule.

As I conceive it this disease is the expression of a change which has been gradual over a hundred years, but is now among us of extreme degree, when man's circumstance is considered before and since the industrial revolution of 1830. Almost every occupation has been metamorphosed by the accessibility of power so that even the daily chores of the home carry no physical burden. White-collar folks, masters of ships or industries, the professions, those who wait and serve food and drink, the employer rather than the employed, the financier rather than the ultimate producer of goods, these are the chief contributors to diabetes mortality, while the agriculturist, the lumberman, the sailor, the smelter and founder, the soldier, cattleman, the day laborer show everywhere a relatively low incidence of the disease.

In some the answer is mere gluttony, not different in nature from the excess expression of any body appetite. In the main bulk of cases however, the problem is one unrecognized by the average man and woman, namely, an imbalance between the body need for fuel to meet the ordinary demands of energy, heat, growth, and repair, and the use of food as tempted by opportunity and supply.

Of course, any disease which selectively prevails among those of the later decades of life will exhibit an increase

with the effective lengthening of life expectancy. Also a city or state with preponderance of those races which tend to engage only in trades or occupations free from much bodily exertion, such as the Jews, will show an increase in diabetes, but it is not race or changing age distribution alone that will account for the rise of diabetes mortality each year to new levels. Nor will the newer skills of diagnosis and treatment, or arbitrary procedures of registration practice explain the entry of diabetes well up among the first 10 causes of death in considerable urban population groups in this country. Diabetes rises with wealth, with command of mechanical power and convenience, with each advance to what some will hail as a bodily millenium, when no one sweats for his livelihood, no one walks to work, and recreation is achieved by exercise only of the little muscles of the eye and ear and fingers.

It is my present belief that health authorities should not only analyze the situation with epidemiological exactness, but issue warnings particularly to persons in the ages and occupations where diabetics are mostly bred, that they must adjust themselves to the mechanistic motorized era by both moderating their own fuel intake and by increasing the physical employment of their great body muscles in work or play.

This is a challenge in the field of hygiene which demands critical approach, and a certain courage in public speech and education, because what seems to me to be the needed word of advice runs counter to man's tendency ever to cherish his indolence, and to delight in lethargy after surfeit.

OCCUPATIONAL DISEASE

I would persuade you to seize and occupy the largest field of preventive medicine, until now excluded from the work of official health organizations in this country. I refer to the prevention of occupational disease. There has been no greater prophet in the history of medicine than that great clinician and keen epidemiologist Bernardini Ramazzini, who laid the foundation for the study and prevention of diseases of artificers in 1717. One of man's distinctions from the brutes is in his use of tools. With tools and trades came contact with other materials, other environments than the comfortable wholesomeness which the herder, the farmer, and the woodsman knew.

In the finest flowering of a liberal civilization when Italy gave to Europe cities of wealth and culture, Ramazzini detected those beginnings of special hazard among clerks from sitting all day at desks, of those who stood at their work, or delved in mines or handled metals or chemicals. Long before the industrial revolution of 1830 transformed the life of man into one of shop and factory, an obligation was imposed upon sanitarians to protect the workman against ill health and premature death lurking in the very nature of his livelihood.

Organized labor has fought to guard the interests of workmen by compensation for employer's neglect and the unwitting risks of dangerous trades, for accidents and poisonings, but the approach, the benefits, the influence toward betterment has been chiefly through financial pressure on the insurance principle.

Great progress has been made in learning the nature of the physical and psychical damage due to the material and emotional handicaps of a multitude of employments. Great Britain, Germany, most European countries, and many of our states have created official agencies to protect the body and the pocketbook of the working man and woman; and yet, at least with us, only the very fringe of the matter has been touched; hardly more than a beginning has been made, and practically nothing

has been done by departments of health in industrial hygiene. It is true that the self-interest of employers in the larger and well organized industries has brought important tangible improvements by physical safeguards and through the employment of physicians and engineers skilled in abating industrial hazards. Also it is true that the U. S. Public Health Service has accepted the serious responsibility of studying the effects of particular trades and occupations upon the current and subsequent health of workmen. But that is not enough. In addition to workmen's compensation laws, and besides the authority of factory inspection, and to supplement the contribution of industry itself and of the federal government, it should be the acknowledged duty of each department of health of whatever population group from rural county to tightly packed industrial state, to concern itself with every variety of occupational handicap to health, and provide through environmental inspection, through medical examination, and by the technical skills of the laboratory a service in some measure comparable with present control of communicable disease.

It is, as Dr. Osler said, the tragedy of today that man is so indifferent to the life of man. Yes, we surround the babe unborn with premonitory protection, deal wisely and gently with infancy and childhood, and then hurl the product of a reasonably healthy youth into a maelstrom of blind chances, of dusts, fumes and fatigues which wear down the stoutest body and cripple the most willing worker.

Ours is a day of increasing mechanization of infinite complexity, of new chemistry and physics, and of occupations calling for hardly more than the spirit of a Robot.

If we would be true to our own generation, and in our day contribute as the bacteriologists did first 50 years ago, and as the nutritionists have done in recent decades, we must use our powers of education, of information, of inspection and abatement, to make all employment as nearly compatible with health as our knowledge permits. Let us have the courage to create a division, an office, a sphere of influence in every health department to be concerned with occupational disease.

VOLUNTEER HEALTH AGENCIES

May I venture one further, and my last suggestion calling for a measure of social courage for the sake of public health? This I address chiefly to the generous lay public which supports private health agencies, both national and local. It has been my observation that where there is high quality of professional leadership and reasonably adequate support for the department of health, private health agencies do not multiply or increase in importance. The visiting nurse associations are in my opinion the only volunteer health agencies still indispensable where a community has a well organized health department. This leads to the further opinion that if the time, effort, organizing ability, public spirit, and contributions in cash for volunteer health agencies were diverted to the direct and exclusive support and advancement of the health department, almost any community would be better served than at present, with less cost, less confusion, less rivalry for public credit, and more community self-respect. Protection of the public health, as distinct from the private practise of preventive medicine, is a highly responsible technical and complicated function properly vested in civil government and trusted to professionally trained health officers. In an orderly and mature society the amateur, the volunteer, has no proper place as an agent of public health in a city, county, or other local political unit.

If we have the determination which

I believe we should have to make our form of government an efficient instrument of social progress, we can no longer afford to have an amateur as well as an official government in each community, one run by public spirited well wishers, the other by elected officers and their appointees.

The good people who support a duplication of governmental functions in health, welfare, and education will do well to attack community needs at the source, and see to it that the health department at least does those things, and does them superlatively well, which philanthropy and executives responsible to volunteer boards can achieve only fractionally under private auspices. It is full time for us to declare our civic independence of amateur health service as we long ago gave over the police and fire departments to local government.

In the present stage of development of civil government I do not see clearly an entirely safe way by which the health and sickness services of the public health and visiting nurses can be absorbed by either the department of health or by any other branch of local government, but as for all other variety of nonofficial local health agencies, distinct from social and relief or family welfare organizations, I believe their discontinuance, with a transfer of interest and support to the health department, would result in a real advance in government in the United States and in the direction of effective non-political health service.

There may still be for a while longer a place for nonofficial national health agencies under some form of central relationship which will permit each such nation-wide organization, devoted to a particular health function, to operate as a bureau of the single central body, thus maintaining a reasonable sense of relative importance in the several fields of health promotion and education.

It should be the declared hope and prospect of this body of professional health workers to encourage the replacement of voluntary by official responsibility for all useful public health functions under government authority. The institutions of professional education and those of scientific research need no other field for demonstration and test of new procedures than the population groups served by agents of civil government. Only by consent of local official health authority can any population unit be used by a private health agency for exposition of some new procedure. As a matter of record I believe it is true that no public health procedure of certain merit has been proposed or applied under private auspices that had not already been applied and made effective by an officer of a governmental health agency.

The local private health agency has served its once useful purpose, as did the Vigilantes and the Stalwarts for suppression of violence and assistance in control of fires, and they should be gently but firmly eased out of the picture while professional official leadership assumes full control of the situation.

SUMMARY

And now, good friends, forgive me if I have not the gift of simplicity and clarity of a Chapin, nor the practical wisdom of a Vaughan, father or son, nor the persuasive logic of a Park, and let me briefly summarize my thesis so that at least some kernel of my thought you may carry off, perhaps to consider, possibly to cast aside as of little merit, but I hope in some measure to test in action and prove in practice.

We are in a position to raise a little the level, and to extend the application of human intelligence. It is our duty to be so faithful to the scientific method, so loyal to the truth, that our authority will be everywhere accepted. To com-

promise with truth for the sake of popularity and publicity hazards the credit of our profession.

It is unlikely that we shall possess such wealth that all can at the same time have the indulgences and the enduring satisfactions or securities of life. Some self-denial, some individual sacrifice of unessentials appear to me to be prior requisites for our investment as liberally in the application of natural sciences to human nature as we know would be both wise and profitable.

A combination of thriftiness, shrewd intelligence, and devotion akin to that of religious crusaders is called for. We who have the knowledge and the vision must teach by example as well as by precept. Five unessentials, the use of which we can if we will reduce, to permit a liberal expenditure for health, are alcohol, tobacco, tea, coffee, and cosmetics.

Then as to social courage for which further advance in public health awaits rather than for more knowledge, wealth or authority:

Let us complete the job of raising man out of the health hazards of his own bodily filth.

Let us directly in the manner of sanitarians and physicians attack syphilis.

Let us acknowledge the evidence of the medical sciences that ethyl alcohol as commonly used for a beverage is a drag on the health and happiness of man, and let us deal with it as a drug and a poison without the pretense of its being a necessity or a blessing.

Let us teach for the sake of women the knowledge which will permit them to choose the time and circumstance of their own childbearing.

Let us recognize the new health problem of diabetes, a disorder of metabolism which has grown with increased command of foods and the power of mechanics, permitting man's escape from physical drudgery, and teach such adjustment in nutrition and muscular activity as experience indicates.

Let us incorporate within the permanent functions of health departments, protection of employed persons against health handicaps inherent in the place and nature of their work.

Let us build upon the permanent structure of official health services under civil government and divert toward this the public spirit and support, until now applied to local nonofficial health promotion, excepting always the visiting nurse.

Health such as modern man and his family can command awaits not more knowledge, but imagination in the use of what we have, in professional leadership, and social courage to follow and support the leaders. By the quality of your guidance, the future of human life among the four nations professionally represented here will be determined in the decades immediately before us.

The TVA's New Deal in Health*

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THE Tennessee River and its tributaries drain an area of more than 40,000 square miles, extending from Virginia and Western North Carolina through Eastern Tennessee, south and west through Georgia, Alabama, Mississippi, back north through Western Tennessee and across the corner of Kentucky with almost ideally situated areas for storage basins. From its head waters the river falls rapidly to provide excellent power sites at other points in its course. Rich in a multitude of minerals, the drainage basin affords also the possibility of broadly diversified agriculture through its mountainous sections, uplands, and broad valleys. Climatically, its situation is almost ideal, with long growing seasons, adequate rainfalls, and mild winters. More than 2,000,000 people of as fine a native stock as may be found in the nation reside within its boundaries.

In this area are the materials both of natural and vital resources from which, through effective combination, an almost ideal condition of life may be wrought; for there are raw materials of wide variety, potential power in ample quantity, and the human resources essential in effecting a reaction of one upon the other for the creation of usable wealth.

The bringing together of these elements into one coördinated development is, however, a major problem of organization not possible of solution except through long range planning and unity of approach. It must be remembered in this connection that the drainage basin, though naturally a unit in itself, extends into seven separate states. The unusual richness of resources and the crying need of their development, together with the complexities of the organization problem must have been in President Roosevelt's mind when he expressed his idea of a long range planning in a message to Congress asking creation of the Tennessee Valley Authority. He said, in part:

> I, therefore, suggest to the Congress, legislation to create a Tennessee Valley Authority —a corporation clothed with the powers (limited) of government but possessed of the flexibility and initiative of a private enterprise. It should be charged with the broadest duty of planning for the proper use, conservation, and development of the natural resources of the Tennessee River drainage basin and its adjoining territory for the general, social and economic welfare of the nation. This authority should be clothed, also, with the necessary power to carry these plans into effect. Its duty should be the rehabilitation of the Muscle Shoals development and the coördination of it with the wider plan.
>
> Many hard lessons have taught us the human waste that results from lack of planning. Here and there a few wise cities and counties have looked ahead and planned. But our nation has "just grown." It is time to extend planning to a wider field, in this instance comprehending in one great project many states directly concerned with the basin of one of our greatest rivers.

A little more than a year ago the three directors of the Tennessee Valley

* Read before the Health Officers Section of the American Public Health Association at the Sixty-third Annual Meeting in Pasadena, Calif., September 4, 1934.

Authority held their first meeting in a Washington hotel. Since that time more than 100 similar meetings have been held, and nearly 10,000 workers are busily employed in bringing to realization a masterly vision. The Wilson Dam, instead of standing idle, is busily engaged in turning out electrical energy. The Wheeler Dam, 15 miles above Wilson, is approximately one-quarter complete, as is also the Norris Dam, located on the Clinch River, one of the principal tributaries of the Tennessee. Projected for the future are two more storage dams and two run-of-the-river dams. Thus, will come power for the transmutation of raw products through human agencies into usable wealth.

Naturally in view of the rich agricultural possibilities of the basin, agriculture and soil conservation through the prevention of soil erosion, afforestation and soil feeding are receiving their due measure of attention. Indeed, the Tennessee Valley Authority law provides for research in fertilizer manufacture and for the manufacture of fertilizer ingredients whenever it seems wise. With all this attention to natural resources and the production of power, the Authority is not unmindful of the part which the conservation of human resources must play in the realization of its program, for natural resources are practically valueless without human resources. It is, therefore, assuming the rôle of an enlightened employer toward its employees and of a constructive force in the protection and conservation of health. No attempt is being, or will be, made to develop a separate health agency, but rather the purpose is to support, strengthen and develop existing agencies in so far as this seems necessary and desirable.

All activity of this nature is centered in a section of Medical Service and Health, which is located in the Division of Personnel, one of the service divisions. The primary objectives of the Medical Service are physical examination and classification according to physical status of all applicants for employment; direct medical care for all employees injured in line of duty until responsibility is assumed by the Federal Compensation Commission; emergency medical care for employees away from their natural residence; assistance in the proper placement of employees with physical handicaps; immunization service for all employees; the control of venereal diseases through a familial approach including prophylaxis, treatment, and education of the employee and his family. In addition, this service assumes responsibility for the compilation and clearing of all compensation claims originating from employees of the Authority.

Because of the wide separation of areas for which service is essential, centers have been established at each site of major activity, including the town construction area at Norris, the site of the Norris Dam, the base of the Norris Reservoir Clearance operation, the site of the Wheeler Dam, the Muscle Shoals area, and the base of the Wheeler Reservoir Clearance Area. Each area is under the direction of a medical officer, to whom is assigned essential subordinate personnel.

After physical examination and prior to final employment, prospective employees are classified into four groups according to physical fitness for duty, then given essential immunization and assigned by the personnel director to service. All injuries, even such as appear insignificant, are given immediate first aid and passed on as quickly as possible by a physician at one of the first aid infirmaries. In the opinion of the Director of the Safety Section, the low degree of severity of injuries is in a large measure attributable to thorough physical examination and prompt medical attention to injuries.

While as yet no systematic activity to secure correction of observed physical deficiency has been established because of the pressure of more immediate responsibilities, it is the observation of the field medical officers that corrections are being made in considerable numbers. A more specific approach to this problem is contemplated as early as possible with the available resources.

The problem of health and sanitation service necessarily includes not only such activity as is necessary within areas directly under the jurisdiction of the Authority and having essentially the status of government reservations, but also, through coöperative agreement, this same activity may be extended to areas immediately adjacent so that conditions reacting upon the health and welfare of employees may be dealt with as those occurring within the area. The administration of service within areas directly under the jurisdiction of the Authority is simple and is directed by our own medical officers and engineers. The organization of service outside of such areas must depend upon coöperative agreements with state and local health authorities, since this is their responsibility. Hence, a small fund has been set aside to become available for strengthening local health services in the major areas of operations, where the activity of the Authority complicates local conditions or where local conditions are such as to result in undue hazard to employees. In two major areas of operations, for example, typhoid epidemics—approximately 100 cases in one instance and 40 cases in the other—have indicated not only the desirability, but the actual necessity of coöperation from the Authority.

Questions of food and milk control, general sanitation, and the usual public health services, it is believed can be solved in regard to the safety of employees by strengthening rather than duplicating existing facilities.

Unquestionably, as a result of the vastly increased shore-line of impounded waters within the drainage basin, malaria will become one of the outstanding problems of the future. Here the same long-range planning, characteristic of the vision of the Authority for the project as a whole, is manifest, for this matter has had serious consideration from the time the dams now in process of construction were designed, and provision has been made for such fluctuations of reservoir levels as are essential to a maximum degree of biological control. Some idea of the extent of this problem may be had from the fact that the Norris Lake will have a shore-line of approximately 800 miles, Lake Wheeler a shore-line of approximately 800 miles, making a total of 1,600 miles. Compared with the present shore-line of Lake Wilson, which covers only 125 miles, the tremendous increase in the extent of this problem is apparent immediately.

Not only does malaria offer an additional example of the need for long-range planning, but also an illustration of the desirability of coöperation with state and local health agencies in the development of strong local health services in the areas affected. A first line of defense is an effective local health organization for each county, contiguous to the impounded areas. Coöperative agreements are in process of negotiation with state and local health authorities and will result undoubtedly in more effective and less costly procedures than if an attempt were made to solve the problem unassisted.

In addition to the need for coöperative development of control services, both the opportunity and necessity for special researches are apparent. For example, we need more precise knowledge of our malaria problem and more effective methods for its control. It is desirable that we should investigate the possibility of improving many of our

public health measures and study our administrative procedures.

Through and with the coöperation of existing agencies, material advances in the acquisition of new knowledge and methods of applying existing knowledge should be possible. With these facts in mind, provision has been made for such basic studies both in epidemiological and administrative procedures as now seem desirable for the development of improved methods in dealing with problems incident to or produced by operations of the Authority. Such studies may include analysis and evaluation of needs of rural areas, the development of the most effective and economical methods for meeting these needs; determination of the type of local health organizations capable of putting such methods into effect, and the acquisition of such new knowledge of conditions under which diseases occur, as may be possible.

Plans now being made for the study of malaria will illustrate the care with which these studies are being approached. Almost immediately a study of the possibility of applying airplane dusting to a shore-line, such as we shall have, will be developed. Previous studies have been made of acreage dusting by airplane, but no satisfactory investigation of shore-line dusting is available.

The procedure being followed in developing personnel for studies and control service is of interest. Through the coöperation of one of the foundations, an unusually capable medical officer is being trained in malariology in order that all malaria studies and control service may be directed by a competent person. More than a year of special studies under the best malariologists of the world will be given this officer during his training. Engineering service for malaria studies and control has already been provided. An individual trained in certain of the natural sciences is contemplated as a possible third element in this work, thus balancing the personnel group and making possible accurate measurements of mosquito and parasite indices, together with special surveys and investigations essential to a definition of the control problem.

Malaria is used as an example of the type of research and method of approach. Unquestionably, the need will arise for investigation of other approaches. Other studies which may afford a basis of future guidance are appropriate administrative units of population; definition of the nature and extent of prevailing health problems; studies of personnel requirements, unit costs, and personnel performance; and field studies of both the epidemiological and survey types.

Nearly all prior studies of rural health service and rural health projects, especially of an administrative nature, have been of a more or less negative character for the reason that they have had inadequate fields of study, or provision has been made for too brief periods of time. Thus, in many such studies the observations have been of deficiencies rather than of positive performance, and conclusions have been reached by inference rather than by logical analysis. It is believed that these difficulties can be avoided in our procedure, and that positive observations rather than negative inferences may become possible.

A *sine qua non* for any scientific study is personnel of high quality and expert training. The policy of the Authority for selection of its employees is admirably epitomized by the Chairman, Dr. A. E. Morgan, in three brief sentences:

> There is a provision that no political test of any kind shall enter in the employment of men on this Tennessee Valley Authority work. Men shall be employed on the basis of merit and no other. The TVA is working in that spirit.

The staff of the Health and Medical Sections is composed, therefore, of unusually capable and well trained individuals. This fact is sufficient evidence of careful planning and a forward-looking policy.

In development of the entire health program, the method of approach will be through and with the coöperation of existing health agencies—federal, state, and local—to the fullest possible extent. For example, the central administrative service of the section includes, as the associate director of the section as a whole, one of the officers of the U. S. Public Health Service, together with a Regional Consultant in county health work, and a sanitary engineer from the same organization. Thus, coöperation is established immediately with the principal federal health agency, and complete coördination is effected. Approach to any local health agency is through the state health organization, and all activity in a given state has as a minimum basis the regulations and policy of that state. In this way, not only is interference and duplication prevented, but also there is actual strengthening of both the existing health agency and the program of the Authority. The wisdom of the policy is illustrated by the fact that not a single major disagreement has arisen with any existing health agency, despite the rapid growth in organization and activity.

In conclusion, and in illustration of the rapidity with which the activity of the sections has been developed, the growth of the staff may be cited. When this Association held its last meeting, the staff of the section consisted of one individual, the director. Its present budget, exclusive of all coöperative and special studies personnel, consists of 21 medical officers, 3 sanitary engineers, 9 semi-professional persons, and 35 clerical and other employees, or a total staff of 68.

It should be apparent, therefore, that the Authority recognizes the conservation of vital resources as a part of the foundation upon which both social and economic well-being must rest. Indeed, the very language of its basic Act implies this recognition by reference to the "orderly and proper physical, economic, and social development of said areas" and "such studies, experiments, and demonstrations as may be necessary and suitable to that end."

If the Authority, as a collateral result of activity in carrying out its direct and specific responsibility, demonstrates that a reduction in the wastage of vital resources is an economic possibility, then we shall have additional evidence of the value of conserving these resources.

Vitamin D Studies, 1933-1934

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THESE studies comprise the administration of vitamin D (cod liver oil vitamin D concentrate—Zucker process, 1933) in evaporated milk and dairy milk, in varied unitages; also ultra-violet irradiation of the skin.

The children included in the control and experimental groups numbered about 425, boys and girls, aged 8 to 14 years, at four institutions in and near New York City. The institutions are orphanages and are the permanent homes of the children studied. Two of these institutions are conducted on the cottage plan, thereby making it possible to segregate the children for control and experimental management. Each cottage represents a separate group. In the other homes segregation of the study groups was maintained by rigid discipline and a daily program which provided for the time and place of these administrations.

Controls were run as follows: In each institution one group continued on its regular diet and one group received a specified amount of plain evaporated milk (no extra vitamin D). These were the negative controls. The number chosen was large enough so that if the results were negative, or near negative, the number of control observations would be sufficient and so distributed that a maximum of clarity in the results would be obtained. Since in the past irradiation with ultra-violet lamp has given such apparently striking results for several years in succession, an irradiated group was included to act in a sense as a positive control.

The experimental groups were given vitamin D milk at three different levels of vitamin D. In a pint of reconstituted milk the following levels were given:

100 units daily
150 " "
300 " "

Last year about 150 units daily of vitamin D in fresh milk was given with apparently definite results which, however, were quantitatively not so good as the results with irradiation. In this year's study several groups on 300 units were included to ascertain whether last year's results were due to insufficient dosage. If vitamin D is a large factor in determining the caries incidence, the spacing of 100, 150, and 300 units per day would show either a graduation or else it must probably be concluded that a larger dose is not more beneficial. If vitamin D is not a large factor in caries, or the distribution of caries in children of this age is too irregular to be subject to such observations as were made here, the facts ought to come out clearly due to the large number and distribution of the controls.

However, the groups were also large enough so that if there was a positive result from vitamin D administration, the three levels would give valuable information. Based on previous experience, the three levels were so distributed that they would show a slight, moderate, and rather marked effect. It was

thought better not to attempt this year to evaluate the possible maximum effect but first to verify the indications of previous years.

To make the milk consumption least burdensome for those children who are not fond of milk, and to secure the best results in regularity of intake, the milk (except the fresh milk furnished by the dairy) was slightly flavored with chocolate. Each milk was repeatedly assayed and found to be of the stated potency well within the limit of error to the method.

The unitage given is in the Steenbock units as described in *New and Non-official Remedies*.

Dental examinations of these children were made in November, 1933, February, 1934, and the latter part of April, 1934. All three examinations were made and recorded by the same persons during the entire study. The total number of carious tooth surfaces in each mouth at each examination was recorded as the percentage of the total number of tooth surfaces present in each mouth. The differences in these totals indicate the increases in carious surfaces at the end of each period. The differences in the percentage increases indicate the progress of dental caries during the year of study.

The three dental examinations of the year yielded the findings shown in Table I.

TABLE I

COD LIVER OIL VITAMIN D MILK NUTRITIONAL STUDIES
1933–34

Percentage Carious Surfaces for 1st, 2nd, and 3rd Examinations

	150 Unit Evaporated Vitamin D Milk			*150 Unit Fluid Vitamin D Milk*			*Plain Evaporated Milk*		
	1st	*2nd*	*3rd*	*1st*	*2nd*	*3rd*	*1st*	*2nd*	*3rd*
Home A	6.30	7.00	7.38	7.73	8.69	9.51	7.15	8.79	9.47
Home C	7.65	8.40	9.06	6.32	7.00	7.69	5.97	8.49	10.33
Home Z							6.06	8.17	9.51
Home Y							5.21	5.94	7.69

	300 Unit Evaporated Vitamin D Milk			*100 Unit Evaporated Vitamin D Milk*			*Control Group*		
	1st	*2nd*	*3rd*	*1st*	*2nd*	*3rd*	*1st*	*2nd*	*3rd*
Home A							6.76	8.63	10.52
Home C							5.74	9.44	11.09
Home Z	5.60	6.39	6.62	5.16	6.70	8.03	5.50	8.28	10.31
Home Y	5.00	5.40	5.50	5.15	5.88	7.46	4.91	7.48	9.06

	Ultra-violet		
	1st	*2nd*	*3rd*
Home Z	5.55	6.58	7.00

TABLE IA

		Home A		
Control 23 girls	Plain Evaporated Milk 22 boys	150 Unit Evaporated Vitamin D Milk 23 boys	150 Unit Fluid Vitamin D Milk 24 girls	
		Home C		
Control 18 girls	Plain Evaporated Milk 26 girls	150 Unit Evaporated Vitamin D Milk 24 girls	150 Unit Fluid Vitamin D Milk 28 girls	
		Home Z		
Control 33 boys	Plain Evaporated Milk 28 boys	100 Unit Evaporated Vitamin D Milk 28 boys	300 Unit Evaporated Vitamin D Milk 30 boys	Ultra-violet Lamp 29 boys
		Home Y		
Control 32 girls	Plain Evaporated Milk 30 girls	100 Unit Evaporated Vitamin D Milk 30 girls	300 Unit Evaporated Vitamin D Milk 30 girls	

CONCLUSIONS

1. There is possible a nutritional control of dental caries.

2. Vitamin D is an important factor in the nutritional control of dental caries.

3. Clinical observations point to a probable correlation of the degree of control of dental caries with the quantitative dosage of vitamin D.

NOTE: The data in the foregoing paper have been extensively analyzed statistically by Professor Earle B. Phelps Professor of Sanitary Engineering, Columbia University, New York, N. Y., and the results have been found significant.

Solution of the Streptococcus Carrier Problem*†

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RESULTS of a 3 year program carried on for the exclusion of streptococcus carriers from the employees of a large dairy industry are presented, with especial reference to the clearing up under treatment of certain throat carriers of this organism.

Of the milk-borne diseases, streptococcal infections have proved the most disastrous, from the standpoints of the number of epidemics and of individuals involved. Septic sore throat has played a prominent rôle in this picture, as shown by Brooks [1] in reporting records of 72 epidemics up to 1932, with evidence of many having passed unrecorded.

In the light of our present knowledge, one must approach a discussion of the epidemiology of either scarlet fever or septic throat with caution; yet developments in the last decade would seem to justify the following conception regarding the latter disease.

While early investigators had reported a hemolytic streptococcus as the causative organism of septic sore throat, Davis [2] in his study of an extensive epidemic in 1912, was the first to describe what is now known as the *Streptococcus epidemicus*. He found that this organism exhibited characteristics which distinguished it from the conventional *Streptococcus pyogenes*. Stock strains recovered from previous epidemics conformed to his description, and his findings have been confirmed by Brown, Frost, and Shaw,[3] and others.

In view of the fact that probably, with a single exception, all outbreaks of septic sore throat have been traced to milk as their source, later studies by Davis [4] were of great import since they led to the reasonable conclusion that the dairy cow was not the natural reservoir of *Streptococcus epidemicus* but became infected through contact with human carriers.

As a result of these developments, the American Association of Medical Milk Commissions in 1929 recommended cultural examinations of individual cows in certified herds for the detection of streptococcus carriers, and later advised that measures be taken for the exclusion of possible carriers among dairy employees.

In 1930, the Milk Commission of the Los Angeles County Medical Association adopted the above program to include both employees and animals.

We have employed the technic as outlined by Frost, Gumm, and Thomas,[5] and amended by Pilot, Hallman, and Davis,[6] with the exception of dry preparations with Pelikan ink No. 542 for capsule demonstration. We feel this method gives better results than the wet

* Read at a Joint Session of the California Association of Dairy and Milk Inspectors and the Laboratory Section of the American Public Health Association at the Sixty-third Annual Meeting in Pasadena, Calif., September 6, 1934.

† From Department of Experimental Medicine, University of Southern California Medical School.

preparations originally suggested and, in addition, affords permanent records. The addition of the ascitic fluid, as used in the amendment, is very valuable.

The Los Angeles Milk Commission certifies 4 dairies, maintaining more than 3,000 animals with about 250 employees. Monthly cultures of milk from the individual cows have been carried out for more than 4 years and during this period *S. epidemicus* has been found only twice, each time from animals imported from outside the state. Both were in the same dairy but came from different states. Neither animal showed gross evidence of mastitis though both were shedding enormous numbers of typical organisms. They were apparently in the carrier state and would have escaped detection except for the special cultural examinations. The subsequent elimination of these carriers from the herd removed a possible source of an outbreak of streptococcus infection among our consumers as both strains showed a high virulence for mice.

The results of our control program among the employees present an entirely different picture and possibly have some bearing on the low incidence of positives among the animals. Monthly throat cultures of the entire employee personnel, in addition to culture on entrance examination, have been carried out for 41 months. During this period approximately 1,000 employees have been examined, requiring around 12,000 cultures. Fifty of these men have been found to harbor streptococci typical of the Davis organism. An attempt to evaluate the percentage incidence of positives would not give accurate information for general use as the figures represent a single culture in some of the men and repeated cultures in the majority.

As previously reported,[7] the original survey of the initial group of some 250 men showed a positive incidence of 2.8 per cent. However, 9 per cent positive cultures were found in a study of 66 individuals presenting themselves for tonsillectomy in one of our hospitals where cultures were made from the tonsillar crypts immediately after operation. Pilot, Hallman, and Davis[8] reported similar findings and emphasized the difference of results according to the care with which cultures were obtained. Experience and care in the technic of taking the throat swabs may have some bearing on our relatively high positive findings of approximately 5 per cent.

All of our carriers gave negative histories of septic sore throat and none showed evidence of acute infection at the time of the positive culture, although some degree of hypertrophy of the tonsils was invariably present. Upon the discovery of the first group of carriers, we were much embarrassed over the responsibility of their disposal, since our health regulations did not recognize either septic sore throat or streptococcus carriers.

Summary discharge would have entailed unjust hardship on the employee and in some cases on the employer. It was also difficult to disregard the responsibility incurred had we released known carriers who might have passed on to uncontrolled raw milk dairies.

Another important factor was the interest shown by our 250 employees in our disposition of these cases, indicating that ultimate success in our program demanded that some effort be made to relieve carriers and restore them to usefulness. As tonsillectomy seemed to offer the only rational and permanent solution, we adopted this measure and met with such success that we have continued it since 1931, in spite of its difficulties and hazards.

Thirty-four, or 68 per cent, of the 50 carriers have been treated in this manner. Of the 16 carriers not operated

upon, the majority refused consent and the remainder were rejected as undesirable applicants for employment or poor physical risks. All cases not operated upon have been reported to the health authorities who have attempted to keep them from working in uncontrolled raw milk dairies.

We have been successful in clearing up the entire group submitting to operation, though not without some difficulty, especially in our earlier experience. Twenty-six, or 85 per cent of the cases were found negative for hemolytic streptococci on the first culture after convalescence and have remained so; 5 failed to give immediate results, the failures being due to incomplete tonsillectomy; to the retention of the organism in the lingual tonsil; or to lymphoid tissue at the base of tongue or in the pharynx. Removal of the tonsil tags and, where possible, the lymphoid tissue, usually brought prompt results; otherwise, local treatment usually with silver nitrate was employed. All of these cases were eventually cleared up.

One of the members of this group, an employee having no contact with cows or milk, was treated by topical applications of chemical germicides, bacteriophage, anti-virus, and even ultra-violet ray. After 3 months' trial without results, the man was returned to the surgeon and under the treatment mentioned became negative.

In the early part of the work, the men were operated upon in clinics or by surgeons of their own choice. This proved unsatisfactory, so arrangements were made to have all tonsillectomies performed by one surgeon familiar with the circumstances under which they were being done. Under this plan, our results have proved much more satisfactory, with few failures in the original operation and a minimum loss of time to the employee.

Apparently these carriers, when once properly cleaned up, remain so permanently, as shown by monthly cultures. We have records of 6 men for over 3 years, and 8 for more than 2 years. In 1 case the cultures were negative until 4 months after the tonsillectomy, when the organism again appeared. Removal of a small residual mass of lymphoid tissue rendered his throat culture negative and it has continued so for 2 years. This is hardly to be considered an exception.

As to the permanency of the carrier state when once established, we found that 4 men who refused the initial operation and reapplied for employment after periods of 1, 4, 6, and 15 months, respectively, were still positive.

Naturally there comes to mind the question of difficulties encountered with the employees in carrying out a program of this type. Our first problem was the elimination of carriers found in the original group, and second, to prevent entrance of infected men among the numerous replacements. Needless to say, we are unable to force them to undergo operation, and care is taken in each case to impress upon them that the procedure is not compulsory except that otherwise they must retire from employment at certified dairies. They are also impressed with the fact that they must assume all responsibility, and care is taken that they present themselves voluntarily to the surgeon.

Written consent is not obtained as we have been advised this precaution is not a protection. Just how far our precautions protect us from legal responsibility is questionable. However, every possible care is taken of the patient and we feel that so far the end has justified the means. At the start, we encountered considerable difficulty in bringing the men to operation, but with each case successfully handled the morale has increased until at present they accept readily, and in some instances with a certain amount of gratitude our bringing about relief of diseased tonsils.

We have had no accidents or delayed convalescence. One of the first cases passed out of our control and after 2 weeks' delay was operated upon while suffering with an acute throat. He developed a severe postoperative streptococcal angina, complicated by extensive erysipelatous cervical cellulitis. For a time the outcome appeared doubtful but after convalescence of some 2 months, he returned to work and has been with us since. This experience gave us much concern and was one of the reasons we assumed control of the operations.

We wish to express our respect for the opinions of Anna Williams [9] and others as to the close relationship of the streptococcus of Davis to the organism of scarlet fever. Our experience has been that at times it is difficult to differentiate them, and we admit that some of the strains rejected have possibly been those of scarlet fever. We also have been interested in the character of the so-called capsule of this group. However, in the study of some hundred separate strains recovered at large, we believe it to be a permanent and important characteristic.

So far as can be determined, septic sore throat has never appeared in our community in epidemic form though sporadic cases are occasionally seen which are clinically typical and exhibit the characteristic Davis organism. We have also found pure cultures of *S. epidemicus* in pus obtained from mastoiditis at operation. Of 5 strains of hemolytic streptococci recovered in blood cultures from cases of general sepsis clinically identical, 3 were typical epidemicus, 2 were classified as pyogenes.

SUMMARY AND CONCLUSIONS

Among a group of men required to maintain a personnel of 250 employees, over a period of 3 years, 50 individuals were demonstrated to be throat carriers of *S. epidemicus*.

Thirty-four submitting to treatment were cleared of the organism and have remained negative under monthly cultural examination.

Among the animals required to maintain combined herds numbering around 3,000, for a period of 4 years, 2 were found with udders infected with *S. epidemicus* without gross evidence of mastitis.

In a community in which an epidemic has never been known, infection with the *S. epidemicus* exists endemically as clinical septic sore throat and extra anginal infections, in addition to the carrier state.

Where the beta hemolytic streptococcus has become established in the oropharyngeal cavity, the organism may be found in all of the lymphoid tissues of this area.

This fact is to be borne in mind when tonsillectomy is advised for the relief of focalized throat infections.

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Approval of Laboratories for Surgical Pathology in New York State*

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THE practitioner of medicine today, wherever he may be located—in a medical center or in a rural district—must have laboratory service. From a broad point of view, the administration of public health measures is primarily dependent upon the maintenance of modern standards in the practice of medicine at the bedside, and thus ultimately upon laboratory service. To be effective, laboratory facilities must be readily available and the work entirely dependable. Examinations can usually be performed most efficiently when undertaken promptly after the specimens have been collected. In many cases, also, if a capable laboratory director is so situated that he can see the patient with the attending physician, the best interests of all concerned will be furthered. Thus, the maintenance of adequate standards and decentralization in locally established laboratories, with a supporting supervision—as opposed to a centralized service by a state organization—become issues of primary importance.

Information concerning the manner in which these problems have been met in different parts of the country may be of interest. We are very grateful for the responses which have been received to inquiries sent to various health departments. The replies have indicated that, in 25 states, arrangements for determining the efficiency of laboratory service have not as yet been made. In 14, supervision of certain phases of the work has been undertaken. The public health laws or other regulations in 5 of the latter group require certain of the diagnostic laboratories to receive official sanction for the conduct of some types of examination. In 2 of these, the technical personnel are provided with certificates showing the kinds of work which they have been found capable of performing. The data furnished thus indicate that the provision which has been made for laboratory service varies markedly in the different states and, for the most part, is limited in scope.

In New York State, the present system of laboratory service dates from the reorganization of the Department of Health approximately 20 years ago, following the revision of the Public Health Law and the appointment of the late Dr. Hermann M. Biggs as Commissioner. The Public Health Council was created at the time of this reorganization. It is without executive or administrative functions, but is authorized to enact a Sanitary Code dealing with any matters affecting the security of life or health in the state (exclusive of

* Read before the Laboratory Section of the American Public Health Association at the Sixty-third Annual Meeting in Pasadena, Calif., September 3, 1934.

the Greater City of New York) and having the force and effect of law. Plans were also inaugurated at that time to broaden the character and scope of the laboratories already serving a few districts and to encourage the establishment of additional ones—all in coöperation with and aided by the central laboratory in Albany—in order that all sections of the state might be provided with an adequate service.[1-4]

The first survey of the laboratories in the state was made in 1915. The ability of the directors and the standards of work varied widely. Thirty-six certificates of approval for a few types of tests for evidence of communicable disease were issued that year to laboratories in which the character of the work warranted such recognition and whose directors were interested in the project. Gradually, more procedures were included and the minimum standards raised. For many years, certain districts, particularly those composed of rural communities, were without easily accessible, adequate laboratory service. This situation was markedly improved in 1923 by the passage of a law granting financial aid from the state, by which under certain conditions it became possible for counties or cities which could not otherwise support an efficient laboratory to equip and maintain one or more.

The number of approved laboratories increased from year to year until in 1934 it has reached 184—129 in which diagnostic service is rendered and 55 in which milk or water examinations only are made. The New York State Association of Public Health Laboratories, formed in 1916, has gradually become an important factor in advancing the standards of laboratory service. It is composed of persons in charge of approved laboratories and those of their assistants who have had adequate training and experience to represent the laboratory. Meetings are held semi-annually, at which results of experimental work are reported and topics of general interest discussed; coöperative studies have also been successfully conducted.

The steady growth in the extent and character of the service in the state has thus so justified itself that it has had the support of the succeeding political administrations without exception since 1914; and recently under the present commissioner of health, Dr. Parran, the service has been still further extended into the broader field of pathology.

In 1930, Franklin D. Roosevelt, then governor, appointed a commission to advise him in regard to the administrative and legislative aspects of public health in New York State.[5] Two subcommittees of this commission, one dealing with the control of cancer, the other with the development of laboratory service in particular, reported separately, stressing the importance of an extension of the system of approval —already developed so successfully in the diagnosis of communicable disease— to the examination of tissue and the diagnosis of neoplastic disease.

The laws of the state were amended at the next session of the legislature, to authorize the Public Health Council to establish regulations in the Sanitary Code, prescribing the qualifications of surgical pathologists in laboratories receiving approval by the State Commissioner of Health.

The Code was also amended to provide for the submission to such laboratories of "representative specimens, or sections for microscopic examination, of tissue removed at operation or at necropsy which require laboratory examination as an aid in the diagnosis, prevention, or treatment of disease or to determine the cause of death." These new responsibilities relating to the approval of laboratories for surgical pathology are administered by the Division of Laboratories and Research

in consultation with the State Institute for the Study of Malignant Disease. Histological examinations of tissue specimens have been made in the Division of Laboratories since 1914. The work has always had the helpful support of the State Institute and of Professor James Ewing, consulting pathologist to the laboratory, who, from the beginning, has been deeply interested in developing higher standards of laboratory service in surgical pathology and in the diagnosis of neoplastic disease.

Briefly, the Sanitary Code requires surgical pathologists to be graduates of schools of medicine recognized by the Regents of the University of the State of New York, and licensed to practise medicine, or eligible for examination for license to practise medicine, in the State of New York; it is further required that they have an adequate knowledge of pathology, and, subsequent to graduation, at least 4 years' training and experience in pathological work approved by the Public Health Council, of which at least 1 year shall have been devoted to training and experience in the diagnosis of neoplastic disease: provided, that under special conditions any or all of the qualifications relating to education or experience may be waived by the Public Health Council.*

Approval of laboratories in New York State is entirely voluntary. Nothing in the Public Health Law or Sanitary Code requires a laboratory to become approved. The physician, however, is obligated to submit certain types of specimens to approved laboratories. Thus, very appropriately, the responsibility for having necessary work done in a laboratory that has met adequate standards is placed with the physician who is in charge of the patient.

For years, it has been our practice, before issuing approval to a laboratory, to have the director or bacteriologist in charge, provided he is qualified by education and experience, demonstrate his ability by the examination of series of specimens furnished for this purpose. Similarly, candidates now examine a series of sections of tissue representative of the type of material which might be expected from a general surgical service, before approval for surgical pathology is granted. The sections, 50 in number, are accompanied by pertinent information concerning the clinical history, operative and other therapeutic measures. These specimens have previously been studied independently by the pathologists in the Division of Laboratories and Research and those in the State Institute for the Study of Malignant Disease. Only those sections are included concerning which there has been accord in regard to the diagnoses and the suitability of the material for the purpose. Approximately 1,000 such sections are now available.†

The procedure has been to request the candidate to submit data concerning his training and experience and to sign agreements relative to the conduct of the work in the laboratory. Provided his qualifications meet the requirements of the Sanitary Code, he examines a series of the tissue specimens at the State Institute in Buffalo, the central laboratory in Albany, or the branch laboratory in New York City. Also, in a few instances the examination has been conducted at the candidate's own laboratory. Reference books are available if desired. The findings reported are considered by members of the staff

* The privilege of the waiver has rarely been exercised and only in the case of applicants whose qualifications, while not exactly conforming to the requirements specified, have been fully equivalent to them.

† Arrangements are being made for a museum from which sections of various types of lesions can be lent to directors of approved laboratories for review or special study. A number of pathologists in New York State, as well as in other parts of the country, have already contributed material for this purpose. As soon as the project can be organized fully, we are hoping that the service will be helpful, particularly to the directors of laboratories who do not see a large variety of surgical tissue.

of the Division of Laboratories and Research and the State Institute for the Study of Malignant Disease. If the results of the examination are satisfactory, a certificate effective to the end of the calendar year is issued to the laboratory, a procedure similar to that followed in approval for other phases of laboratory work. The certificate, which is subject to revocation, may be reissued each year, unless the surgical pathologist should sever his connection with the laboratory, or evidence should be obtained that the character of the work is not entirely satisfactory. The surgical pathologist also agrees to return the certificate, should he for any reason no longer be in charge of the work in the laboratory.[6]

On July 1, 1934, 59 laboratories in charge of 41 pathologists had received approval for surgical pathology. Six of these are in New York City, where the State Sanitary Code does not apply. The persons in charge of the laboratories there which have received approval by the State Commissioner of Health, usually have wished to act as consultants to directors of laboratories in other parts of the state. Five surgical pathologists have qualified who have not as yet accepted, positions in New York State. As would be expected, almost without exception candidates who have had 4 years of intensive training under competent pathologists and have been actively engaged in this field of medicine have qualified in the practical examination. On the other hand, it has been a most effective means of demonstrating lack of ability in this type of work. Thus far, 19 applicants have failed to qualify. Almost all of them either had not been examining surgical tissue as a routine procedure for a number of years, or their training and experience, while approximating that required, was not entirely satisfactory.

The spirit of coöperation shown by the pathologists in this effort to raise the standards in surgical pathology has been most gratifying. Few question the importance of the service which a well qualified resident surgical pathologist can render. Already the effect of the program on the decentralization of laboratory work for the state has become evident.

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The Industrial Hygiene Section 1914-1934*

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SOME 25 years ago, a few persons, principally physicians but some economists, had appeared in the country who were aroused at the menace of occupational diseases. These began to associate themselves more or less in the subject of industrial hygiene. Now and then for half-a-century past someone had written upon the subject. In 1902, C. F. L. Doehring, a student of George M. Kober's at Washington, made the first official survey of industrial hygiene in America. This was done under the Hon. Carroll D. Wright, Commission of the Department of Labor, and the survey was made in the government shops in Washington. In 1905, Massachusetts was investigating its factories under Dr. William C. Hanson. In February, 1908, Dr. George M. Kober, while Secretary of President Roosevelt's Homes Commission, published a volume upon the subject, *Industrial and Personal Hygiene*. In the same year valuable articles by Dr. George M. Price, Dr. C. T. Graham-Rogers, Dr. Frederick L. Hoffman, and Dr. W. Gilman Thompson began to appear.

In 1910, the Illinois Commission on Occupational Diseases finished its survey under the direction of Dr. Alice Hamilton and the guidance of Prof. Charles R. Henderson, Dr. Ludvig Hektoen, and others, and in June of the same year the First National Conference on Industrial Diseases met in Chicago at the call of the American Association for Labor Legislation under the guidance of Dr. John B. Andrews, Prof. E. R. Commons, Prof. Henry W. Farnam, and Dr. Henry B. Favill. Also, in New York City in 1910, Dr. Thompson started the first clinic on occupational diseases. This was followed in 1911 by the establishment of another at Rush Medical College, Chicago, by the writer, who had been with the Illinois Commission above mentioned.

Following these activities came those of the U. S. Bureau of Labor Statistics, the U. S. Bureau of Mines, the New York State Factory Investigation Commission (under Price in 1912–1914) and others; also, the impetus given by the XV International Congress on Hygiene and Demography held at Washington in 1912.

Hence, it was not at all surprising that a number of the persons concerned in these activities met at the Jacksonville, Fla., meeting of the American Public Health Association, held in December, 1914, and petitioned for a Section on Industrial Hygiene. This petition was granted and the new Section was the 5th in the list of 10 sections now composing the Association.

A special symposium of 4 papers on industrial hygiene was given at the

* Read before the Industrial Hygiene Section of the American Public Health Association at the Sixty-third Annual Meeting in Pasadena, Calif., September 3, 1934.

Jacksonville meeting, *viz.*, by George M. Kober, E. R. Hayhurst, John B. Andrews, and C. T. Graham-Rogers (in the order presented); and it is a striking fact that all of the following persons read papers in the various sections at that meeting which bore directly upon the subject; C.-E. A. Winslow, J. W. Schereschewsky, John A. Landis, William F. Snow, B. S. Warren, George E. Tucker, Irving Fisher, Philip Jacobs, D. D. Kimball, Earl B. Phelps, G. L. Ruehle, J. W. Trask, George S. Whipple, Slade, Carl Alsberg and Feldman. The following, likewise, took part in the discussions which followed: William A. Evans, Frederick L. Hoffman, Charles J. Hastings, Woods Hutchinson, Eugene L. Fisk, William C. Hanson, Thomas R. Crowder, Frederick S. Lee, Gustave F. Reudiger, Curtis C. Lakeman, Cressy L. Wilbur, Robert Olesen, Louis I. Dublin, James A. Miller, W. S. Rankin, E. L. Thorndyke, Roger G. Perkins, Deacon, and Selskar M. Gunn—the last named then Secretary of the Association.

The next Annual Meeting was held at Rochester (1915) where Dr. Kober was appointed temporary chairman who named a nominating committee consisting of George M. Price, J. W. Schereschewsky, C. D. Selby, Gillihan, and Louis I. Harris. The new Section held 4 sessions, and the following presented papers in the order given: J. W. Schereschewsky, George M. Price, C. D. Selby, W. I. Clark, Routsong (of Dayton), E. R. Hayhurst, William F. Snow, Louis I. Dublin, E. L. Fisk, Harry A. Mock, DeLeon, Coleman, Haven Emerson (for Louis I. Harris), W. Gilman Thompson, Kristine Mann (not present but paper read by title and summary), W. H. Rand (not present but paper read by title and summary), G. C. Farnum, A. J. Lanza, C. E. Armstrong, I. M. Rubinow, John B. Andrews, W. D. Yaple (not present), C. T. Graham-Rogers, and Victor C. Noonan. In addition to those named, discussions of papers were made by George M. Kober, Alice Hamilton, Louis Schwartz, Meyers, Holden, Konrad, Gillihan, C. E. Ford, Theodore B. Sachs, P. S. Platt, S. M. McCurdy, J. M. Woltz, Lee K. Frankel, Victor C. Heiser, V. A. Moore(?), Eugene L. Fisk, W. S. Watkins, John W. Kerr, E. L. Pettibone, George T. Palmer, Brewer, I. A. Lanahan and David L. Rouch.

The first officers of the Section were elected at the third of the four sessions held in Rochester, and were: George M. Kober, *Chairman;* Alice Hamilton, *Vice-chairman;* E. R. Hayhurst, *Secretary*. By common assent and for a number of years the officers succeeded from Secretary to Vice-chairman, to Chairman, and then to Section Member of the Advisory Council which the Association then had.

The names of many not already mentioned were added to membership in 1915, and in 1925 were still on the roster of this Section, *viz.:* Arthur B. Emmons, II, C. C. Elliott, Lloyd Noland, Francis D. Patterson, Alfred E. Shipley, E. C. Jackson, R. W. Corwin, Charles F. Horan, Victor C. Safford, Millard Knowlton, Charles W. Cranshaw, Charles S. Prest, J. T. Black, Easton, Mull, A. J. Orenstein, Anna M. Richardson, D. B. Lowe, J. E. Rush, and C. C. Young.

In 1916, the Section held five sessions at the Cincinnati meeting and added more names well known to us, such as Otto P. Geier, George L. Apfelbach, H. R. M. Landis, Richard A. Feiss, F. E. Deeds, Royal Meeker, and others, and we had many at our sessions who visited from other Sections.

The successive officers of the Section and the annual places of meeting are shown in the table on the next page.

The World War greatly stimulated interest in industrial hygiene, added materially to the membership of the

Year	*City*	*Chairman*	*Vice-Chairman*	*Secretary*	*Councillor*
1914	Jacksonville		(Section petitioned for)		
1915	Rochester	Kober	Hamilton	Hayhurst	.....
1916	Cincinnati	Hamilton	Hayhurst	Price	Kober
1917	Washington	Hayhurst	Price	Schereschewsky	Hamilton
1918	Chicago	Price	Schereschewsky	Patterson	Hayhurst
1919	New Orleans	Schereschewsky	Patterson	Lanza	Price
1920	San Francisco	Patterson (Legge)	Lanza	Winslow (Ford)	Schereschewsky
1921	New York	Lanza (Ford)	Brown	Sawyer	Patterson
1922	Cleveland	Wright	Sawyer	Elliott	Ford
1923	Boston	Hayhurst	Ford	Elliott	.....
1924	Detroit	Ford (Smyth)	Smyth	Hayhurst	.....
1925	St. Louis	Smyth	Lanza	Hayhurst	.....
1926	Buffalo	Crowder	Cheney	Hayhurst	.....
1927	Cincinnati	Cheney	Fisk	Hayhurst	.....
1928	Chicago	Fisk	Rector	Hayhurst	.....
1929	Minneapolis	Rector	Lanza	McCord	.....
1930	Fort Worth	Lanza	Bricker	McCord	.....
1931	Montreal	Thompson (L.R.)	Greenburg	McCord	.....
1932	Washington	Winslow	McCord	Kessler	.....
1933	Indianapolis	McCord (Sayers)	Sayers (Kessler)	Kessler	.....
1934	Pasadena	Sayers (Thompson)	Kessler (Gray)	Coleman (Hayhurst)	.....

Those named in parentheses filled the offices specified, at certain meetings, due to the absence of the elected officers. Section representatives on the Advisory Council were discontinued in 1923. The 3 Section officers are now members of the Governing Council of the Association. In addition, the Section has an advisory committee called the "Section Council" composed of the 3 officers and 5 fellows, 1 of the latter elected each year to serve 5 years. The Section also has 1 representative on the Editorial Staff of the Association and 1 on the Committee on Eligibility.

Section, drew in many medical and welfare directors of industrial establishments, and at the same time saw the formation or extension of other organizations in the field principally associated with the general safety and industrial economic movements. Sheer want of space does not permit the mention of more names well known to us, but the membership was upward of 75–90 persons during this period.

Following the war and perhaps due somewhat to the distant meetings held successively in New Orleans (1919) and San Francisco (1920), a slump occurred both in attendance and interest at the Annual Meetings although probably not afflicting the membership of this Section more than that of others. As a matter of fact, however, the "old guard" withdrew considerably from active participation, due partly to some developing special lines, but fundamentally, I think, for two other reasons explained below. It was not because at the Annual Meetings the activities of other Sections conflicted directly, as some of us said, with those of the Section on Industrial Hygiene, or to the extending growth of other organizations interested in specializing particular phases of the subject, so that many of us came to belong to several organizations. It was due, first, to the fact that government and convention everywhere were, and still are, devoting time and energies to extending *accommodations* in the shape of rehabilitation and occasionally compensation (not that these things are not laudable), instead of devoting resources to *prevention* and, secondly, because it was difficult to discern the function of the Section any more when it was realized that other public health workers were not looking upon the health of the worker or of the work place as a part of their genuine programs! And why? Plainly because it was and is not yet the "style," and because the laws in practically every

state have placed such health activities largely in other than health departments. In two or three states this has worked out pretty well, but the careful observer knows and sees the results in all the rest. This is the Gordian knot then to be cut in America: Industrial hygiene under other than medical and health supervision.

Public health workers—sanitarians of all descriptions and professions—must get into this "mess"—I know no better word to define it. This is a health matter, not something to be shelved on laymen. Ten years ago, Dr. C. O. Sappington (*Journal of Industrial Hygiene*, VI, 3:94 (July), 1924), of this Section, found that sickness caused 20 times as many cases of absenteeism as accidents, and was responsible for 7 times as much time lost from work, from which it would seem rational that any program for solving the problem of industrial disability intelligently must recognize the health causes while not relaxing vigilance in regard to accident causes. This in itself makes the whole subject worth every physician's and sanitarian's attention. Is organized government, as represented by health or labor departments, doing its duty in this matter? We think not. We will put it stronger—we know it is not, because we have investigated the subject, perhaps ever so superficially, and found that the most unguarded machinery in the entire health field is the health of the worker while on the job.

As evidence of this we have seen the disease, tuberculosis, the great criterion disease of environmental health conditions, recede from 1st to 7th place in the list of causes of death in the general population in the past 20 years, but the recent monograph, "Death Rates and Occupations," by Jessamine S. Whitney of the National Tuberculosis Association, shows that tuberculosis was the second cause of death among *gainfully occupied males* in 1930, with a rate of 95.1 per 100,000, or next to heart disease. A recent study of Ohio vital statistics showed that, in *mechanical and manufacturing industries*, the tuberculosis death rate for *females* was 118.1 as compared to 96.6 for males, for the year 1929, and that, in 1930, among those so employed, the ratio of female deaths to males was nearly 6 to 1 (*Ohio Health News*, VIII, 19:3 (Oct. 1), 1932).

At the present time the greatest morbidity and mortality is not associated with childhood any more, but with chronic degenerative diseases which appear in adult life, and are particularly rampant in the industrial working classes. Certainly no health program is complete without attention to this serious situation, and I believe no health department is doing its full duty that does not recognize occupational diseases and provide for their reporting and prevention, the same as for communicable diseases, food poisoning, etc.

Our Secretary, B. S. Coleman, informs me we now have 139 members in the Section on Industrial Hygiene, of whom 42 are Fellows, and 97 are full-fledged active members. Furthermore, 16 new applications for Fellowships have been approved for election at this meeting. What better nucleus is needed to consider the facts, policies, scientific aspects, and promotion of a dutiful program in industrial hygiene in this country? To this end we now have 8 standing committees (in addition to the Section Council) which are reporting at this meeting.* Nearly all of these committees were appointed at the Cincinnati meeting in 1927, and nearly all of their respective annual reports

* (1) Standard Practices in the Problem of Compensation. (2) Pneumoconiosis. (3) Industrial Anthrax. (4) Volatile Solvents. (5) Skin Irritants. (6) Lead Poisoning. (7) Industrial Fatigue, and (8) Ventilation and Atmospheric Pollution. In the past 6 years, two standing committees were dropped: (1) Industrial Morbidity Statistics, and (2) Extension of Interstate Control of Poisons and Hazardous Substances.

(published, first, in the *American Journal of Public Health*, but since 1930, in the Association's *Year Book*) have gained world-wide recognition as authoritative and unbiased, and representative of the efforts of the best brains the country affords in industrial hygiene. It has also been a great credit to have belonged to any of these committees where hard work was entailed, no funds were available, and most work had to be done by correspondence.

TO WHAT EXTENT HAVE THE MAJOR PROBLEMS OF INDUSTRIAL HYGIENE CHANGED IN THE LAST 20 YEARS?

The average age at death for the industrially employed has advanced by several years, but is still some 6 to 8 years lower than that for those in agricultural pursuits.

Occupational dermatoses are recognized as by far the most widespread of characteristic occupational diseases, and the group of oils, greases, and cutting compounds usually leads, with cleaning agents and petroleum distillates next up.

Lead poisoning maintains the statistical lead as the most costly and no doubt the most prolonged of the disabling occupational diseases, although the incidence of severe cases is lower than formerly. Its diagnosis by refined chemical methods, and the discovery of lead ingestion and secretion in the average individual have been a development of recent years and by members of this Section, notably, Aub and Kehoe. The discovery of lead lines in the long bones by use of the X-ray should be mentioned.

The hazards from spray painting, enameling, lacquering, etc., first recognized in 1915 by an early member of this Section, Dr. R. P. Albaugh, have enormously extended as innumerable poisons have come to be applied by this method.

" Dust phthisis " of 20 years ago, and " pneumoconiosis," barely mentioned at that time, have gradually contracted down to nearly one great cause producing the disease " silicosis," while the theory of sharp cutting edges has faded out to a more rational mechanical-blockage-and-slow-chemical reaction of some sort. Chest X-rays, first developed as a group-study in 1915 by Lanza (another of our charter members); an extension of animal experiments and the development of dust counts by others of our members; and, unfortunately, costly litigation as a consequence of lack of control, have all come during this period.

Certain disastrous poisons such as benzol, anilin, carbon bisulphide, and carbon monoxide, which were rampant 20 years ago, have largely disappeared as industrial hazards, although some others connected with explosives, " anti-knock " agents, cleaners, solvents, and electro-plating, have taken their places, and we find the names of many of our members attached to these problems, notably Sayers and Yant and their staffs, McCord, Smyth, Phil Drinker, Alice Hamilton, Adelaide Ross Smith—space alone limits naming more.

" Corrosive and toxic agents " are still classified with " inflammable agents " in most factory and labor statistics!

Pneumonia has come to be recognized as a potent cause of death among heat exposed workers (under cover), while the administration of common salt in the prevention of heat stroke has been a real discovery.

Radium emanations, lung cancer, and, at least in England, mule spinner's cancer, have appeared as rare but fearful occupational diseases. Indeed, industrial exposures have shown how to produce cancer at will, and may lead to the elimination of this scourge.

Ventilation has developed to the phase of " effective temperature " and " radiation balance," but with very little industrial application, or even com-

mercial recognition, while "air-conditioning," especially for warm weather, is just knocking at industry's door.

Rarefaction has been shown to be essentially an oxygen-want question.

Illumination, especially sufficient illumination, appears to have been satisfactorily solved for most all industrial workers.

Natural methods of resuscitation have all but supplanted the unphysiological mechanical devices of earlier days, while the addition of a stimulating amount of carbon dioxide to oxygen has been an invention of the past decade.

Rehabilitation, including occupational diseases as well as injuries, has come to be a government function in several states, and some of our members, particularly Kessler, have had a leading part in this important matter.

I must also mention that the Section on Industrial Hygiene has always enjoyed the fullest coöperation of the Editor-in-Chief, Dr. M. P. Ravenel. The vast majority of our papers have been published in the *American Journal of Public Health*, and we have been especially favored with space for abstracts, book reviews, bulletins and reprints.

Finally, the terms "occupational disease" and "industrial hazard" have not yet been standardized or even defined to everyone's satisfaction. A "specific test for fatigue" has not yet been discovered, nor, I might say, a method of correlating a speaker's everlasting dynamics with the increasing weariness of the audience.

In closing, I risk one prophesy only: This Section is going to grow tremendously in influence and membership in the next 20 years.

Use of Dinitrophenol in Nutritional Disorders*

A Critical Survey of Clinical Results†

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A LITTLE over a year ago, our first clinical report on dinitrophenol appeared in the *Journal of the American Medical Association.*[1] The interest in and enthusiasm for this product were so great that its widespread use has become a matter of some concern in public health. The total amount of the drug being used is astonishing. For instance, during the past year, the Stanford Clinics have supplied to physicians, or to patients on physicians' prescriptions, over 1,200,000 capsules of dinitrophenol of 0.1 gm. each. Since the usual daily dose is about 3 such capsules and the average duration of treatment about 3 months, this corresponds to 4,500 patients treated with the drug in a year. In addition, upward of 20 wholesale drug firms are marketing the compound, which suggests that a considerable population is being medicated. Probably at least 100,000 persons have been treated with the drug in this country alone. But this is not all, for reports of its clinical use have also appeared in the medical press of Canada, Great Britain, France, Sweden, Italy, and Australia. Therefore, it appeared timely to summarize the accumulated knowledge of the clinical effects of this drug, and to assess the results critically, in order to determine, if possible, the present status of this new therapeutic agent.

HISTORY

We began to study the actions of alpha dinitrophenol 2–4 first in animals and then in patients, in 1931, being stimulated to do so by the animal experiments of Heymans,[2] who used a similar compound, namely, dinitronaphthol. Dinitrophenol was not new, since it had been known as a dye for about a hundred years, and as an industrial poison for 32 years.[3] There was some interest in its toxicology during the war, due to poisoning in munitions factories. Fundamental investigations of the actions of the compound were made at that time by Magne, Mayer, and collaborators in France, although their studies were not published until 16 years

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later, *i.e.*, in 1932.[4] Our experimental results[5] and those of all other investigators are in essential agreement on the remarkable powers of dinitrophenol for augmenting oxidative metabolism by a direct action on the tissues or cells. Prior to our work, there was no indication in any of the published papers that this potent metabolic stimulant might be of any therapeutic usefulness. Therefore, when we first drew attention to the possibility of producing metabolic changes in man with small non-toxic doses of dinitrophenol, there was presented to the medical profession a new tool for use in metabolic disorders.

MEDICAL USES

It has been shown[1, 6, 7, 34] that dinitrophenol can be used to keep the metabolism at an increased level for prolonged periods of time. An increase in the metabolic rate of about 50 per cent can be maintained in most patients without difficulty, by proper selection of dosage; in fact, greater increases have been repeatedly produced.

Rabinowitch and Fowler[18] state that they have found difficulty in standardizing the oral dose because of individual variability. Examination of their data shows that, when the probable error of clinical metabolic readings is considered, the agreement is as good as could be expected. Variability in sensitivity to drugs of all kinds is a matter of common knowledge, so that, if perfectly reproducible changes were claimed, it would throw doubt on the validity of the observations. In contrast to Rabinowitch, Dunlop[7] finds a reasonably good agreement between the metabolic stimulation and the size of the dose, which confirms our experience. However, in treating ambulatory patients[6] it is desirable to proceed conservatively by starting with small doses and increasing them, if necessary, according to the degree of response elicited.

When the drug is taken in adequate dosage, the increased metabolic activity burns extra fat and carbohydrate and thereby reduces body weight.[6] It is very interesting that the protein does not seem to be appreciably affected in the combustion process, as indicated by nitrogen excretion. Accordingly, the tissue framework tends to be conserved.[7, 8, 14] In a preliminary report on the loss of body weight in obese individuals,[6] it was stated that losses of 2 to 3 pounds a week could be obtained with doses of dinitrophenol which were well tolerated. Three other groups of workers have confirmed this result in smaller groups of patients,[7, 9, 10] and it is now a common experience with many practising physicians.

Dunlop[7] compared the relative efficiency of thyroid and dinitrophenol in reducing weight in a few selected patients. He found that thyroid upset the water balance of the body in such a way as to cause at once a rapid loss of weight by dehydration. On the other hand, dinitrophenol reduced the weight less rapidly, but in proportion to the metabolic increase and not by an effect on water balance. His experimental results do not satisfactorily establish his conclusion that "even in maximum therapeutic doses it (dinitrophenol) does not compare, as a weight reducer, with thyroid"; since he used both drugs for only a few days at a time, and during these periods the weight changes were so small as to be readily accounted for by shifts in the water balance.

The amount of permanent weight change that can be produced by dehydration in non-edematous patients is not great enough to be important where any significant amount of weight is to be lost. If this were not the case, simple dehydration procedures would answer the needs of this difficult clinical problem. Therefore, it appears to us that, before the therapeutic efficiencies of these drugs may be satisfactorily

compared, it is necessary to make observations over long periods of time, during which more than a few pounds are lost. It has been indicated by us in several publications [11, 12] that dinitrophenol cannot be used to replace thyroid secretion. It is therefore misleading to compare the intensities of their actions since they act so differently qualitatively.

Since dinitrophenol can increase the tissue metabolism by a direct action on the cells, without producing the side-actions which accompany metabolic stimulation by thyroid, it offers, theoretically at least, interesting possible applications in medicine, besides its use in obesity. For instance, there have been reported interesting effects in psychiatric conditions,[13, 14] and failure to relieve myxedema,[7, 18] and many other studies are in progress. Because of its widespread and probably sometimes indiscriminate use by large numbers of people, it is pertinent to consider possible harmful effects from the compound.

FATAL EFFECTS

In experimental animals, a large enough dose of dinitrophenol will stimulate the heat production to the point where fatal fever results. The heat production may be increased 1,200 per cent, the body temperature increasing 0.2° C. per minute. Under these conditions, death is caused by heat rigor, that is, by heat-coagulation of tissues. Exactly similar effects can be produced in man provided a large enough dose is taken. This was seen occasionally in munition workers during the World War, who absorbed large amounts of dinitrophenol through the lungs or skin.

The first case of fatal poisoning from the therapeutic use of the drug was that of a physician who took a tremendous dose on two separate occasions, with the alleged object of treating an imaginary syphilitic infection.[15] In his second administration, he took 5 gm. of the drug as a single dose, which is a 17 day supply for most patients. A fatal fever resulted, with death in 12 hours.

The second death was a girl who bought the drug on her own responsibility from a druggist. On the fourth day of medication, she took 0.8 gm., which caused a fatal pyrexia.[16] Since the daily dose during the first week or two should be only 0.1 gm.,[6] it is obvious that this girl took a very excessive dose. In fact, it was a larger dose than we have ever used therapeutically, even after months of continuous medication.

The third death occurred in a psychiatric patient who was receiving doses within the therapeutic range.[13] The clinical history of this patient's illness and death is completely at variance with the known actions of dinitrophenol, since there was a protracted course of illness and an absence of serious fever. Also, the autopsy and clinical studies were so incomplete as to preclude a correct diagnosis of the cause of death.

These three cases represent the reported fatalities from dinitrophenol. If the third case be excluded because of the question as to the true cause of the death, it is seen that neither of the other two cases was due to the use of the drug in the usual therapeutic doses. When one considers that some one hundred thousand patients have been treated with this exceedingly potent therapeutic agent, it is a matter of some gratification to know that fatalities have not been more numerous. It might be added in this connection that fatalities from the fever of dinitrophenol can be largely prevented, in animals at least, by chilling the skin with ice packs and by giving oxygen inhalations.[17]

There are also a number of observed, or theoretically possible, deleterious actions, which do not result fatally. These may be discussed according to the

organs involved, *i.e.*, skin, liver, kidneys, circulation, and gastrointestinal tract.

SKIN REACTIONS

In a series of 113 obese individuals,[6] we observed the presence of skin rashes in about 7 per cent of cases. The rashes consisted of maculo-papular dermatitis, urticaria, or angio-neurotic-like swellings of the skin, accompanied by pruritus and occasionally by desquamation. There was usually a prodrome of itching before the skin lesions developed. Four similar cases have been reported to date,[9, 19, 20, 21] and many more than these have undoubtedly occurred. Dintenfass [22] has recorded still another case in which the dermatitis was associated with congestion of the middle ear.

The inference might possibly be drawn from certain reports that a Derrien reaction with the urine could be used as a means of predicting possible lack of tolerance to the drug. This idea rests on a misunderstanding of the nature of the test; it is merely the well known diazo reaction, which is positive in the presence of amino-nitrophenols. Hence, it only indicates that dinitrophenol has been absorbed in the body and has appeared in the urine in a reduced form. During the war, this reaction was used solely as a means of identifying those workers whose exposure resulted in appreciable absorption of the drug.[23] Bolliger has recently cast doubt on the value of the reaction for even this purpose.[24]

Another possible way of predicting dermal intolerance is by the usual allergic skin tests. Frumess [20] states that, in a case of urticaria, he was able to reproduce the skin-sensitivity by passive transfer. However, an extensive series of skin tests [25] in patients with and without skin rashes, who received dinitrophenol therapeutically, has failed to bring out any evidence that skin-sensitivity can be detected by patch, scratch, or intradermal wheal tests. Passive transfer tests were also negative. These methods would therefore seem unpromising as means of selecting patients for dinitrophenol medication.

Since the skin rashes may be very unpleasant or alarming in some cases, they constitute the main disadvantage in the therapeutic use of dinitrophenol. A saving feature, however, is that about half the patients who have had one skin reaction are able, after a short interval, to resume the medication without further difficulty.

LIVER DAMAGE

Much has been made by some editorial writers and clinical reporters of the possibility that dinitrophenol might damage the liver. This has been based mainly on reasoning by analogy from picric acid and other compounds. Since the dinitrophenol has a yellow color, which imparts an icteric tint to the blood plasma, it may be mistaken for the bile pigments of jaundice.[26] The differentiation from the latter may be readily made by adding dilute hydrochloric acid to the plasma which decolorizes the dye. In one patient suspected of liver injury, Rabinowitch [18] found only a slight increase in the bilirubin in the blood and no change in the urobilinogen. At the next examination of this patient, the findings were all negative. Another case where liver injury was apparently produced has been recently reported by Sidel.[34]

We have seen no evidences of damage to the liver in our clinical cases,[6] and at this time we may add more extensive data on this question. In 17 patients who were given an average of 0.3 gm. of sodium dinitrophenol daily for from 1 to 5 months, there were made 22 determinations of the icteric indices of their acidified blood plasmas. The average value was 8.2 units with a range of from 4.8 to 16.3. Fourteen

determinations on non-medicated patients gave an average index of 7.6, with a range of from 4.2 to 10.0. In 45 patients, the bilirubin content of the blood serum was determined by the van den Bergh reaction.* This group of patients received an average daily dose of 0.3 gm. (range 0.1 to 0.6 gm.) for an average period of 19 weeks (range 2 to 50 weeks). The average total amount of the drug taken was 36 gm., with a range of from 2.8 to 122.5 gm. In these patients, the bilirubin averaged 0.29 units, with a range of from 0.13 to 0.79 units. Only 2 patients of the 45 showed values over 0.5, but these had no demonstrable clinical evidence of liver disturbance.

If the dinitrophenol injured the liver progressively, it might be expected that the bilirubin of the blood would increase with the total amount of the drug taken. The following tabulation shows that no such increase was present, which further supports the conclusion that damage to the liver was not produced in these patients.

Average total amount of dinitrophenol taken in gm.	*Number of cases*	*Bilirubin units (average)*
0 – 10.0	12	0.27
10.1– 30.0	8	0.34
30.1– 40.0	14	0.32
40.1– 80.0	8	0.22
80.1–122.5	4	0.31

The van den Bergh reaction was repeated in 6 patients some time after stoppage of the dinitrophenol medication. These patients had been off the drug for an average of 36 weeks when they showed an average bilirubin content of 0.24 units (range 0.15 to 0.40). Accordingly, there was no evidence of delayed liver damage.

It has been observed by us [15] and by Poole and Haining [16] that, in fatal dinitrophenol poisoning, destructive changes may occur in the liver as well as in other viscera. It must be remembered that death in these cases was accompanied by a very high fever, which in itself is enough to account for the morphological changes observed in the liver cells. The usual therapeutic doses of the drug produce no change in body temperature and also no evidences of change in liver function. However, the possibility must still be left open that in occasional patients an idiosyncrasy may exist which might mediate damages to the liver.

KIDNEY

If dinitrophenol in therapeutic doses damaged the kidneys, this would be manifested by albuminuria and related changes. Such evidences could scarcely go undiscovered, since urinalysis is such a common routine procedure. Hence, it becomes of significance that only 1 possible case of renal injury has been reported thus far. Rabinowitch and Fowler [18] reported 1 patient who developed an albuminuria and high blood urea during dinitrophenol medication. Three weeks later, the urine, and the blood urea and creatinine were all normal. In our patients [6] albuminuria has never been produced by the drug, but on the contrary a limited number of patients have lost their preëxisting albuminurias during the medication. Our experimental studies [27, 30] on animals have also shown the drug to be quite devoid of toxic effects on the kidneys. Therefore, the possibility of renal damage would appear so remote as to cause little or no concern in the therapeutic use of the drug.

CIRCULATION

One of the most striking features of the metabolic stimulation of dinitrophenol is a lack of significant changes in blood pressure or pulse rate, unless therapeutic doses are exceeded.[1, 6] That is, the metabolism may be increased by

*The van den Bergh data were obtained with the assistance of Elizabeth Hines.

as much as 50 per cent without demonstrable changes in circulatory activity. This phenomenon is in striking contrast to the effects of thyroid administration, where circulatory changes are a marked feature of the symptom-complex. Confirmation of this early finding has been given by Looney and Hoskins,[14] Rabinowitch,[18] and Dunlop,[7] and more recently again by ourselves working under different conditions.[28] We have observed that, when a patient feels very hot and flushed, there is a rise in venous pressure. This may be the result of vasodilatation in the skin rather than the metabolic stimulation, since the venous pressure changes do not correlate with those of metabolism. Rosenblum[35] observed in patients whose metabolic rates were increased 37 per cent by dinitrophenol, that the circulation time from the arm to the tongue was unchanged. This would be in keeping with the lack of changes in the blood pressure and pulse rate previously reported.

Masserman and Goldsmith[13] have made the rather startling claim that 5 out of their 18 psychiatric patients showed toxic effects characterized by a fall of blood pressure, tachycardia, stupor, etc. No such effects were observed by Looney and Hoskins[14] in a similar goup of patients, nor in upward of 300 non-psychotic patients observed by us. Not a single case of hypotension has been observed by, or reported to, us and none has been reported in the literature. The unconfirmed and possibly misinterpreted observations of circulatory changes by Masserman and Goldsmith, taken together with an unexplained death among their patients, suggests that there may have been some error in the therapeutic procedures they used, such as the possible use of a wrong isomer or an impure preparation of dinitrophenol.

Patients who have hypertension can be medicated with dinitrophenol like other patients. As they lose weight, the hypertension is usually improved[6] and the associated symptoms are ameliorated.

BLOOD

In studying the possibility that dinitrophenol might affect the blood, both the red and white corpuscles must be considered. Thus far we have not made extensive red cell counts in patients receiving dinitrophenol, but there have been no evidences of anemia, even after months of medication. The oxygen capacity of the blood of 15 patients was determined for possible evidences of injury to the respiratory function of the blood. Since the normal oxygen capacity of the blood varies from 18 to 21 vols. per cent and in these medicated patients the average value was 19.5 vols. per cent with a range of from 18 to 22 per cent, there is no reason to believe that the blood was injured. These patients received an average of 0.3 gm. sodium dinitrophenol daily, for an average period of 6 weeks. The addition of sodium dinitrophenol, in concentrated solution to several specimens of blood did not change the oxygen capacity. Therefore, the drug does not appear to affect the hemoglobin of the blood *in vitro* and *in vivo*.

Study was also made of the fragility of the red cells of these same patients to determine whether there was any increased tendency of the cells to hemolyze. The cells were exposed to various strengths of hypotonic salt solution and the concentrations at which hemolysis began and was complete were noted.[29] Hemolysis of normal cells begins at from 0.46 to 0.38 per cent concentration and is complete at from 0.34 to 0.25 per cent. With the cells of the medicated patients, the hemolysis began at an average of 0.44 per cent, with a range of from 0.42 to 0.46 per cent, and was complete at an average of

0.31 per cent, with a range from 0.25 to 0.38 per cent. Since these values were all within the normal range, there was no evidence of alteration in fragility of the red cells.

Current emphasis on the problem of agranulocytosis makes it desirable to observe the white blood cells in patients receiving dinitrophenol. We have seen no cases of malignant neutropenia, or of any condition which might be ascribed to a reduction in the number of white blood cells, among the considerable number of patients treated at Stanford. In addition, we have examined the blood and bone marrow of dogs given extra-therapeutic doses of dinitrophenol daily for 6 months without finding any abnormalities.[30] However, Hoffman, Butt, and Hickey[31] have reported 1 patient who developed a neutropenia while taking dinitrophenol, and who recovered. A second case has recently been reported,[36] and other unpublished cases have apparently occurred.[33] Agranulocytosis has been reported in association with medication with a large number of unrelated drugs, and even in the absence of medication. Although the cause of agranulocytosis is not yet understood, it is probable that the underlying factor common to all cases is a defective bone-marrow which requires some, and apparently sometimes a relatively insignificant, exciting cause to precipitate the crisis. Given such bone-marrow, it is conceivable that many extraneous agents, physical, bacterial or chemical, and including even dinitrophenol, might initiate the clinical syndrome. The fact is that the vast majority of patients can take massive doses of the various drugs alleged to cause agranulocytosis without damage to white cells, and yet in a sensitive individual even a small therapeutic dose of one of these drugs may suffice to precipitate the condition. However this may be, we shall continue to examine all patients receiving dinitrophenol with the possibility of agranulocytosis in mind, and hope to present more specific data on the question at some future time.

GASTROINTESTINAL TRACT

Heymans has stated that dinitrophenol causes very severe gastroenteritis and loss of appetite, and suggested that the loss of weight was due to the failure or inability of the patient to eat.[32] In our very large series of patients, there have been only 3 cases with digestive complaints during the medication with dinitrophenol. These complaints lasted only for a few days, such as might be expected from a slight dietary indiscretion. The claim that this drug is a severe irritant to the gastrointestinal tract of patients is unwarranted for doses of therapeutic range, according to our experience and to that of large numbers of physicians prescribing it. Tissues from the gastrointestinal tracts of dogs given the drug for 6 months by mouth also showed no evidences of abnormal changes.[30] Therefore, there is no good reason for postulating a hypothetical gastroenteritis as the cause of the loss of body weight in the face of repeatedly demonstrated metabolic stimulation which does adequately account for it.

DISCUSSION AND SUMMARY

It can now be said that dinitrophenol is of definite value as a drug for treating obesity and perhaps some other metabolic disorders. In the hands of the medical profession, it can be used with the maximum benefit and with minimum deleterious results. Unfortunately, its sale cannot be confined to physicians under present legal regulations. As a result, it can be, and is being, sold in patent and proprietary medicines under names which do not reveal its presence. A person buying such an anti-fat remedy over the drug store counter, with no more directions

as to its use, or warning of possible harmful effects, than the manufacturer pleases to put on the label, may run a serious danger of doing himself harm. This problem is particularly pressing since "obesity cures" are extensively bought by fat people for self-medication without diagnosis. Therefore, it would seem desirable that dinitrophenol be added to the poison list, and its sale regulated so it could not be obtained except on a physician's prescription.

In the first enthusiasm for a new drug, which has spectacular actions, it is to be expected that it may be used somewhat too freely. This we have consistently tried to prevent in the case of dinitrophenol by stressing the potential dangers of the compound when used indiscriminately. Certainly, it should not be used as a routine measure in any clinical condition. Obesity can be controlled in most cases by the physician who will patiently supervise the dietary regime. In other cases, thyroid or thyroxine may be needed. It is only when all other measures have been thoroughly tried and found ineffective, and when there is impelling need for weight reduction, that dinitrophenol medication, with a knowledge of attending risks, should be undertaken. Under these circumstances, the physician must balance the prospective benefit against the potential harm, just as he does with any therapeutic procedure, and give the patient his best chance.

This summary of the clinical effects and side actions of dinitrophenol shows that in some respects this drug is not ideal as a therapeutic agent, since it may cause certain undesired side-actions in a portion of the patients treated. However, this does not mean that it cannot be used safely under proper conditions. Investigations are under way in our own and many other laboratories to develop new compounds which may be better than this original or parent substance. It would be only a matter of chance, if dinitrophenol happened to be better than any substitute that could subsequently be prepared. Therefore, it may be expected that the next few years will see other compounds brought forward and advocated. Perhaps some one of them may supplant alpha dinitrophenol as the agent of choice. However, this will in no way affect the great significance of dinitrophenol as having been the first foreign agent, or drug, to be demonstrated as a very potent and well nigh universal metabolic stimulant, which was available for experimental purposes and useful for alleviation of human infirmity.

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Concurrent Immunizations

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ON December 11, 1933, I did 100 Schick tests on grammar and preschool children who had received immunizing injections of diphtheria toxoid without previous Schick tests, and on reading them 3 days later found 91 were Schick negative. We were surprised at this result, as the individuals had been given toxin-antitoxin in 1930 and the toxoid in 1931 and 1932. The immunizing agents had been carried, unrefrigerated, over a hot desert for 96 miles, and therefore could not have been of the highest efficiency. After reading the Schick tests with this percentage of immunity, we looked to our sterilization and to the dosage of the Schick material, and could find no fault in either.

The next day we went to a settlement 114 miles from the Unit, where the same condition of giving immunizing injections for diphtheria obtained, and on reading the Schick tests found practically the same percentage negative.

In checking the inoculations given these 2 groups of school and preschool children, we found that they had been given simultaneous immunizations of toxin-antitoxin or toxoid with typhoid vaccine, and in many instances a smallpox vaccination had been done at the time of the primary injection. Later in checking our records we selected a group of 180 grammar school children in Miami and 350 school and preschool children in Hayden, who had had concurrent immunizing injections of diphtheria toxoid with typhoid-paratyphoid vaccine and smallpox vaccination, but without previous Schick tests, and the percentage of Schick negative children ran the same. We therefore Schick-tested 3,000 children, most of the group being of grammar school age, who had had the diphtheria inoculations from 1 to 3 years previously but without Schick testing, with the result that the entire group who had received concurrent immunizing inoculations showed 90.7 per cent immunity. In this series we had watched sterilization carefully. The heated toxoid was carried and kept in thermos jugs that were properly iced so that the Schick control material would be properly refrigerated at all times. Pains were taken to see that each child got exactly 0.1 c.c. of the fluid in an intradermal injection. Faults in technic where the skin was penetrated have not been counted in this series. Where such faults occurred, however, the children were given the Schick test at the time of the readings of the other children in this group, and were then read 3 days after the original reading.

We found from records of the diphtheria immunizations in Gila County, that from 1930 to the end of the first half of 1933, 90 per cent had received simultaneous immunizing injections of the toxoid and the typhoid-paratyphoid vaccine. This was due largely, I believe, to the distance a former director and nurse were compelled to travel in order to immunize the school children, as it is 114 miles from the office of the Gila County Health Unit to the most northern school in the county, and 50

miles to the most southern. For this reason time was an element in the giving of immunizations, although the same conditions obtained in the schools at Globe, where the office is located, and at Miami only 6 miles away.

While we have done considerable Schick testing in children who did not receive concurrent immunizations, the percentage of those Schick negative has not yet been tabulated, our efforts having been spent in checking those Schick tests where concurrent immunizations had been given, and in those individuals where the alum precipitated toxoid was used.

The ages of those included in the 3,000 tests vary from 1 year to 12 years. In other words, the group consisted of children who received the immunizing injections between the age of 6 months and 9 years. The highest percentage of Schick positive children was in the 8–10 year old group. The greatest percentage of Schick negative children who had received concurrent immunizations, was in the 1–5 year period.

Tabulations have not been made for age groups of the elapsed time from the primary injections to the Schick tests.

As there is little, if any, mention in the literature as to the higher immunity percentage found where concurrent inoculations are made, it seemed fitting to make this report of the 3,000 Schick tests made from December 11, 1933, to June 30, 1934.

Relapsing Fever Problem of California*

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STATISTICS concerning the incidence of relapsing fever in California (39 cases of which 16 were unproven by blood examination), its clinical features as well as a general discussion of the epidemiology, have recently been given by Briggs.[1] Aside from the work at the Hooper Foundation, University of California, as far as I know there has been no detailed study made of the California strains isolated from human cases and wild animals. My results, to a considerable extent, with discussions of the work and opinions of numerous authors throughout the world, have been embodied in 4 articles already published. In this paper I will review some of my outstanding conclusions regarding the California strains thus far studied.

In general I may say that the morphological characteristics of the spirochete do not give us any criteria for the differentiation of species. The clinical disease in mice caused by the 8 California strains which I [2] have studied was practically identical in each except that some strains proved to be more virulent than others. As to the disease in guinea pigs there seems to be considerable difference in the clinical picture and in the individual susceptibility of these animals. While spirochetes are usually present, in certain animals the cardiac blood examined in thick film every day for 22 to 23 days after inoculation never revealed spirochetes, though it was infectious for mice. The serum of these particular guinea pigs with cryptic infections was not protective for mice. The controls receiving serum alone were not infected. The blood had been centrifugalized at high speed for 3 hours and the serum kept in the ice box for 2 weeks.

The entire life cycle of relapsing fever spirochetes has not yet been revealed. The question of dosage required to infect animals and the stage of the disease at which the inoculum is taken is still of considerable importance. In my hands "negative blood" when infectious generally produces a mild disease. Studying Texas strains Kemp, Moursund, and Wright [3] found that a small dose of negative blood produced positive results earlier and a more pronounced infection than larger amounts. It would have been interesting to have destroyed the viability of the invisible forms and to have made an attempt to evaluate the protective properties of the serum. Most other workers, as far as I know, have attributed different antigenic properties to the spirochetes of the various phases of the disease. As regards the dosage, in all this work to evaluate the comparative infectivity of spirochetes from different stages of the disease, consideration should be given to the presence or absence of spontaneous agglutination in the inoculum and the number of spirochetes present.

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For this purpose only washed spirochetes should be used.

Novy and Knapp [4] and Kemp, Moursund, and Wright [3] believe that the viability of blood kept *in vitro* depends upon the phase of the disease from which it was taken, relapse spirochetes dying out rapidly. These workers respectively kept blood 40 and 6 days. Gray [5] did not find onset blood kept at 0° C. or at room temperature infectious for 40 days. While I have not kept whole blood as taken from the animal I [2] have added a few drops of whole uncitrated mouse blood (first relapse) to about 6 c.c. of defibrinated sheep's blood and placed it in the ice box. The blood has remained infectious for over 5 months. It is now our practice in carrying on our strains, in order to save time and animals, to inoculate mice from sheep blood every 2 or 3 weeks and place the onset blood from the infected mouse in fresh sheep's blood.

The California strains are infectious when fed to mice and by the conjunctival route in guinea pigs. I have been unable to affect the normal increase of spirochetes in the blood of mice at onset of the disease by the injection of the serum of hyperimmunized mice. This is contrary to the experience of Novy and Knapp.[4]

IMMUNITY

Passive immunity frequently can be conferred by the injection of homologous serums even of "recovered" mice if given several hours before the spirochetes while heterologous hyperimmune serum may protect if the spirochetes are added to it or if the serum is injected separately by the intraperitoneal route at the same time. In testing for active immunity with either homologous or heterologous strains, contrary to the opinion of most workers, it appears to make no difference from what phase of the disease the spirochetes for the test are taken. As to onset and first relapse spirochetes, Kemp, Moursund, and Wright [3] have confirmed my [6] findings that there is cross-immunity between them. It is interesting to note that these authors have produced active immunity in white rats by intraperitoneal injections of heat killed spirochetes.

In my earlier work with 3 California strains I [6] found that all were probably identical, and studied in comparison with *Sp. novyi* and *Sp. duttoni* I showed that 3 mice hyperimmunized (10 injections) with a California strain were protected against 4 injections of *Sp. novyi* (onset and relapse spirochetes). Mice less solidly immunized with *Sp. novyi,* which when received was less virulent than this particular California strain, were not protected against it. I then discussed the history of *Sp. novyi,* the findings of St. John and Bates [7] in comparing it with the Panama strains and the possibility of a close relationship between it and the California strains.

In later work I [8] showed that the serum of a "recovered" guinea pig very mildly infected by the conjunctival route with a Texas (Fall Creek) strain gave absolute protection to 3 mice inoculated with a Central California (Lake Tahoe) strain and marked partial protection against more virulent strains from Southern and Northern California. This tends to confirm the opinion several times expressed that certain Texas and California strains are probably identical. In the same paper I have discussed in detail the technic and sources of error in cross-immunity tests. Their correct application depends upon the determination as accurately as possible of the degree and duration of the immunity to the homologous strain of the immunized animals at the time they are to be tested and the *relative virulence* for the same animal species of the 2 strains to be tested against each other. In testing "recovered" or hyperimmunized mice against a heterologous

strain, aside from the usual normal controls it is well to inoculate 2 mice of the same series of "recovered" or hyperimmunized animals again with the *homologous* strain as additional controls.

Experience has shown that sometimes at a given point immunity diminishes very rapidly. When occasionally rare spirochetes of the heterologous strain appear after inoculation, showing incomplete immunity, one can thus sometimes form an opinion as to the probability that there was not absolute immunity at the time of the test to the strain with which the animals were immunized. This may occur even though a preliminary test with a large dose of the homologous strain 10–15 days before the heterologous test showed complete immunity. However, the results obtained in cross-immunity work are mainly a question of dosage, standardized if possible, for each organism. With a rigorous technic one can control to a considerable extent the many complicated factors and show relationships which could not be put in evidence by haphazard methods. As for the 8 California strains studied, judged by cross-immunity tests, all appear to be related to each other, some very closely, and some others, originating in areas about 450 miles apart, are undoubtedly identical. Only 1 strain at the time it came into my hands was markedly less virulent than the others.

The literature on the differentiation of species of spirochetes is too voluminous to review in this paper. The cytologic methods with immune serums apparently show differences to exist between strains which by the methods of passive or cross-immunity appear to be identical. The value of cross-immunity tests as a criterion of species relationship or identity, due to the variable results obtained by different workers and the inherent difficulties encountered, is seriously questioned by many.

Nicolle and Anderson [9] believe that, because of the tendency of each spirochetal strain to individualize, there are no distinct species, and that this notion should be eliminated. On the other hand, the "pluralists," while admitting this tendency toward individualization as regards certain strains, believe that they do not go to the point of identity in all respects and therefore that species do exist. Nicolle and Anderson have given their criteria for the separation of the spirochetes of relapsing fever into groups giving less importance to the vector than to other characteristics. They state that the vector "is purely geographic and therefore fortuitous." This idea is not shared by Brumpt [10] who believes that their identification should depend upon their transmission by the different species of vector. He was unable to transmit the Texas strains by any tick species tested other than *O. turicata* and conversely that *O. turicata* did not transmit experimentally by biting, *Sp. duttoni, Sp. venezuelensis,* nor *Sp. hispanicum*. He has, therefore, named the Texas strains and, provisionally, those of California, "*Spirochaeta turicatae n. sp.*" This would seem, perhaps, rather premature, given the fact that *O. moubata* is capable of transmitting at least 5 spirochetal species and that most of these latter may be transmitted by 2 other tick species. The ability to transmit in nature and the adaptability of all the American ticks and other arthropods to the Texas and California strains have not been studied. While Kemp, Moursund, and Wright [11] have shown a strict adaptation between Texas strains and *O. turicata* they find that *Sp. novyi* is not transmitted in the laboratory by this tick. They [12] had previously shown by cytologic tests and the Pfeiffer phenomenon that *Sp. novyi* is identical with the Texas strains. They therefore consider that these latter do not constitute a new

species. They believe that "more stress could and should be placed on the serum tests, when these tests are made on solidly hyperimmunized animals, rather than on the specificity of the vector." I apologize if I have encroached upon the prerogatives of the epidemiologists in discussing this question before this section. My excuse is that the elucidation of the problem of the relationship between the American strains is so inextricably dependent upon results obtained in the laboratory.

I submit that we have a right to consider the results of the various workers and their conclusions in a critical spirit. Aside from the sources of error in maintaining spirochetal strains in a state of purity, it is well to remember the dictum of Nicolle and Anderson [13] that "No invertebrate . . . can be considered as the transmitting agent of a disease if one has not recognized and demonstrated by what mechanism it transmits it in nature." That certain arthropods may or may not be shown in the laboratory to infect by biting does not necessarily prove that they are or are not the *usual* transmitters in nature, though they may or may not be. Likewise the infectiousness of emulsions of any given arthropod does not prove it to be in nature a vector of the disease by biting, though it may be.

The possibility or probability that biting insects other than lice and ticks may by adaptation become specific vectors is dependent upon ecological and other biological factors and the subject should elicit greater interest. Further work should be undertaken with California rodent fleas, as I am not yet convinced that my own infection may not have been due to these arthropods. The fact that my assistant was very ill with night sweats, chills, and high fever (blood not examined as he complained of bronchial symptoms), at the same time as my own infection is not without significance. We had both been autopsying squirrels teeming with fleas and were severely bitten during 3 days. However, none of the animals, all of which were adults, proved to be infected with spirochetes.

CARRIER CONDITION

Whether the persistence of viable forms of spirochetes in the body and particularly in the brain of "recovered" animals is productive of a continual reinforcement of immune bodies has been a subject of much controversy. Kritchewski [14] claims that neurotropic as distinct from somatropic races of spirochetes exist. Levaditi, Anderson, *et al.*[15, 16] have shown that these persistent forms, generally invisible, cause lesions in the brain which have more than one analogy with those due to the neurotropic syphilitic virus. Their "encéphalite récurrentielle" began as early as 48 to 96 hours after the injection of *Sp. duttoni*. I [2] have already described the brain lesions of mice which had hemiplegia or other symptoms which might have been attributable to the injection of relapsing fever spirochetes. Though the relapsing fever therapy for general paralysis shows that no immunity exists in these cases I used several human serums showing a positive Wassermann reaction in protection experiments in mice against some California strains of relapsing fever. The results were all negative.

Authors differ as to whether spirochetes can be found in the brain when the blood is not infectious. Delanoë [17] working with *Sp. hispanica* has stated that in the course of the disease the brain may be infectious but that this is never so unless the blood is also virulent. I [8] have found this to be the case with California strains in all my experiments to determine this question.

Reactivation of latent infections—Some investigators claim that the antibodies of the blood stream present an

impenetrable barrier to the invasion of these forms, visible or invisible, which may be latent in the brain, bone-marrow or elsewhere in the body. Several workers, by the injection of *Trypanosoma brucei,* have reported the reappearance of spirochetes in the blood stream, in some cases as late as 5 months after the original infection. I [18] have never been able by means of intercurrent infections, or typhoid, or other vaccines to obtain reinfections in recovered mice.

There is considerable doubt in my mind as to whether the carrier condition in this disease may be a source of great danger to man. However, we should not lose sight of the possibility of reactivation in the blood stream from various causes of those visible or invisible spirochetal forms which may have undergone little if any attenuation during the short period they may have remained in the bone-marrow or brain. A cryptic or abortive infection of the blood stream might result which, due to the presence of susceptible ectoparasites, might constitute a source of danger. Stitt [19] is of the opinion that because second attacks in man usually do not produce relapses or sometimes even symptoms, such cases may become an ideal source of infection with lice or ticks. As a matter of fact, spirochetes have been found in the blood of man for very extended periods after "recovery" from infection (45 days in Madagascar and recently 5 months in San Francisco). Immunity in man, however, is apparently of short duration, Todd [20] having reported 2 natural infections in the same individual in a single winter. My own serum had no protective properties 8 months after my infection. It is fortunate that the urine, unlike the blood, does not constitute a source of danger in relapsing fever.

Golden Mantle ground squirrels *(Callospermophilus chrysodeirus, chrysodeirus (Merriam)*—Donkeys, horses, sheep, goats, foxes, jackals, and some other wild animals, have crytic infections. Many other species are found in nature to be infected. Of the squirrels and chipmunks surveyed in California no spirochetes have been isolated from the Golden Mantle ground squirrel (Dorothy Beck, personal communication). I [18] made exhaustive studies of 5 adults of this species 1 month after capture. In none of them at various intervals was the blood infectious nor did the serum protect mice against the virulent strains with which I experimented. Many attempts to infect them with large doses by the conjunctival and intraperitoneal routes combined failed. Neither before (1 animal) nor after inoculation was the brain infectious. After inoculation the serums failed to protect mice against the strains inoculated. Whether these mature animals had an acquired immunity I do not know, but the study of the young of this species in the spring is indicated.*

As man is only an accidental host in California where massive louse infections do not exist, the subject of the carrier state, aside possibly from that in wild rodents, is only of academic interest.

COMMENT

Considering the presence in the Sierras of several species of ticks known to be vectors elswhere of relapsing fever, that the transmission of spirochetes in ticks appears to be hereditary (Texas strains by *O. turicata,* Brumpt) and the widespread rodent reservoirs of the virus in our forests, the eradication of relapsing fever in California is well nigh hopeless. A blood examination should be made in all cases of fever of unknown etiology, especially if the patient had been in the mountains.

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* Several workers have failed to demonstrate antibodies in the sera of patients subsequently proved by inoculation to be immune, and the sera of certain individual adult guinea pigs which were resistant to our strains did not protect mice nor contain other immune bodies.

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Safety Speakers' Bureau

THE Metropolitan Chapter of the American Society of Safety Engineers, 29 West 39th Street, New York, announces the organization of a Speakers' Bureau consisting of 50 authorities on accident prevention at work, on the street, and in the home. Speakers will be available without charge to industrial plants, schools, service clubs, women's organizations and other groups.

STANDING ORDERS FOR NURSE-TEACHERS

Associate Editor's Note: Since Dr. Wilson's Standing Orders for his school nurses at Evansville, Ind., was mentioned in the Nursing Section Notes (p. 80) of this *Journal* in January, 1934, a number of inquiries have come to the Associate Editor and Dr. Wilson from school men, school physicians, and health officers in widely separated parts of this country and Canada asking for copies of these Standing Orders.

Foreword by Charles C. Wilson, M.D., formerly Director of Health and Physical Education, Board of Education, Evansville, Ind., now serving in a similar capacity in Hartford, Conn.

"The health and physical education program in the public schools of Evansville, Ind., is a coördinated program of health service, physical education and health education. The entire program is under the Board of Education. As part of the health service program 5 nurse-teachers and 1 supervisory nurse-teacher are employed. This is in the proportion of 1 nurse-teacher to 2,500 pupils. The title nurse-teacher is used to emphasize the fact that an important function of the phase of the program is teaching. The nurse-teacher is really a teacher with nursing training. Her function is to use every possible procedure to further the education of pupils, parents, and teachers in the field of health and the prevention of sickness. The supervisor of nurse-teachers in Evansville is Florence Roller, R.N. The following are the Regulations and Standing Orders for nurse-teachers prepared by Miss Roller and approved by me."

I. Arrival at School

A. Upon arrival at school the nurse-teacher shall first sign the time book in the principal's office. (The nurse-teacher shall make every effort to be at the school according to schedule and shall inform the principal, if possible, when unable to be there on time. If work at another school necessitates a change in schedule, that should be arranged for with the principal and the supervisor.)

B. Time for home visits may be taken from the school period scheduled when indicated.

II. Duties of Nurse-Teacher

A. At school clinic

1. A definite signal, arranged for by the principal, shall be used to announce to the teachers that the nurse-teacher is ready for clinic. At this time all children needing health care shall be sent to the room assigned for this purpose. Each case should be made educational and the children should be taught and encouraged to give first aid when possible. The nurse-teacher inspects the children, gives advice or treatment, takes a temperature when indicated, or recommends exclusion. She should give the teacher any necessary information concerning the child. Be sure that teacher and principal clearly understand the purpose of your clinic.

2. Keeps First Aid Cabinet in order and well supplied.

3. Have some one responsible for materials when nurse is not present.

B. Assisting doctors with physical examinations

1. Previous to examinations, vision and hearing should be tested and recorded on health cards. The date, age, grade, height, and present weight should also be filled in.

2. Be responsible for letters sent out urging parents to be present at time of examinations.

3. Assist with clinical work at time of examination as necessary. You may interview parents concerning correction of defects, etc., may give vision or hearing tests, verify weight record, etc., for benefit of parents.

4. Endeavor to make the examinations as private as possible. Also see that children are undressed to waist for examination.

5. Notify parents of findings and recommendations made during physical examination.

a. Give slip to parent at time of examination.

b. Send notices home as soon as possible after examination.

c. Home visits, if possible, made to homes of all children with defects, whose parents are not present at examination. Make home visit on all cases with heart or lung condition marked 2 or 3 the same day examination is made.

d. Make out Health Score Charts for teachers following the examination.

e. Tabulate the results of examinations for each school and make reports to supervisor.

C. Work with parents

1. Coöperate with P. T. A. as much as possible by keeping them informed as to the work being done in the school and giving information and reports to Health Chairman.

2. Circumstances permitting, urge parents to call at school for consultations concerning their children's health.

D. Home visits

1. Each home visit should be purposeful and educational, not only for the individual but for the family as a whole. Keep your relations with the family on a friendly basis even though you do not accomplish your objective.

a. Explain the need and urge correction of physical defects.

b. Make arrangements for such corrections as must be made through the free or partially pay service.

c. Investigate known cases of illness where no medical care is being given. Arrange for medical and nursing care to be given, if needed.

d. Make post-operative visits where nurse-teacher has arranged for operation.

e. Learn home conditions of children and secure parents' coöperation.

f. Make an investigation of any case of tuberculosis, contact or suspect.

g. Give necessary demonstrations of:
Ventilation of sleeping room
Shampoo
Gargling
Proper cleansing of ear
Dressing or compress
Treatment for pediculosis, impetigo, scabies

E. Make routine room inspections when indicated

1. For communicable disease, pediculi, etc., instruct the teachers in method of inspection and encourage them to give the daily room inspection. The inspection may be conducted as follows: The nurse explains to the teachers her reason for visiting the room. She stands with her back to a window. The children pass before her about 2 feet apart, giving her an opportunity to observe their condition. Instruct pupils to show the palms and back of hands with fingers spread and sleeves pushed up as far as possible. Lift hair showing ear and scalp behind ears, also forehead. Draw down their lower eye lids, throw back their heads so that edges of nostrils may be seen, open mouth so that throat may be examined (individual tongue depressors used when necessary). The nurse-teacher should avoid handling children but should ask the teacher to take the names of any children whom she wishes to have examined more closely. After finishing inspection, these children should be cared for individually in the clinic.

2. Exclusions—The nurse-teacher shall, in the absence of the physician, recommend the exclusion of any pupil who, in her judgment, shows signs or symptoms of a communicable disease. If the principal desires, she shall make out the exclusion blank in duplicate, giving one to the child and filing the other in the office. She should notify the Board of Health of any suspicious reportable disease. Date of re-admittance should be entered on stub of exclusion book when child returns. (Principal should appoint some one to care for these matters in nurse's absence.)

F. When special examination of a child is indicated, leave with the school clerk the following information: Child's name, school, grade, teacher's name, and reason for examination.

SUPPLIES FOR SCHOOL FIRST AID CABINETS

Alcohol 70%
Tr. iodine 3½%
Mercurochrome 2%
Oil of cloves
Vaseline
Zn. oxide ointment
Ammoniated mercury 2%
Tr. green soap
Aromatic spirits of ammonia
2 in. gauze bandages
1 in. gauze bandages
Roll adhesive
Sterile gauze roll
Cotton
Toothpicks
Thermometer
Scissors
Needles
Paper bags for waste
Eye chart
Communicable disease chart

STANDING ORDERS FOR USE OF SUPPLIES

Refer cases to family physician when in your judgment his care is needed. *Nurse-teacher must not assume responsibility for the care of infections.* Application of drugs should be made with toothpick cotton swab or cotton pledget, fresh ones used for each application. Dressings showing good home care should not be removed if in good condition unless the nurse feels it is for the best interest of the child. Apply sterile dressings as needed but use as economically as possible. Use a piece of sterile gauze to cover injury and use roller bandage to hold in place unless adhesive will serve the purpose equally well.

NOTE: All dressings, applicators, tongue depressors must be well wrapped in paper before being put in waste paper basket.

In case of serious injury make every effort to get in touch with family as they should take the responsibility for securing medical service. Give simple first aid until physician is secured or family takes child over.

Favus and Ringworm—Scrub with tincture of green soap, paint with tincture of iodine. The next day and each day until healed, apply 2 per cent ammoniated mercury ointment.

Impetigo—Remove crusts with tr. of green soap, apply 2 per cent ammoniated mercury. Bandage if possible. Exclude cases which might endanger others. Give parents printed slip outlining treatment, if parents are unable to obtain medical advice.

Discharging Ears—Cleanse only. Swab with cotton.

Pediculosis—Exclude until following day all children having live pediculi. Those with nits only may remain in school if nurse is satisfied that condition is being properly treated. Follow up with home visit if necessary to get condition corrected. Give parents printed slip outlining treatment.

Scabies—Exclude for 3 days. If case is neglected, make a home visit to secure correction. If family is unable to care for it, give printed slip of instructions.

Cuts or Scratches—Swab with tr. of iodine or mercurochrome.

Cold Sores—Apply zinc oxide.

Poison Ivy—Zinc ointment dressing.

Burns—Apply vaseline lightly. Bandage as necessary.

Boils—Apply sterile gauze dressing. Spread lightly with vaseline.

Dog Bites—Let bleed freely. Apply sterile dressing. Report name and address of person bitten. Report name and address of dog's owner to Board of Health. Use influence to have dog secured *alive* for examination.

Toothache—Apply oil of cloves with cotton on toothpick.

Earache—Urge care by family doctor.

Foreign Substance in Eye—Use small cotton swab moistened in clean water or flush eye with boric solution, using cotton pledget.

Splinters—Use forceps or needle sterilized in alcohol. (Clean with green soap and alcohol before putting away.)

Care of Thermometer—Rinse with water before putting in mouth. After removing, wipe with cotton, wash with green soap, scrubbing vigorously, wipe with cotton, scrub with alcohol and dry before replacing in case.

The above suggestions for care are offered for use in those cases where children show signs of neglect. The above suggestion should not be carried out in any case where the parents are receiving or are able to obtain medical care. Urge home care. Treat neglected cases only. First aid treatment for accidents and injuries occurring at school is the function of the nurse-teacher. Treatment of other conditions is a responsibility of the parents and the family physician.

Current Mortality Releases*

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THE records centralized in the various bureaus of vital statistics are valuable in proportion to the use which is made of them. The universal policy has been to emphasize the importance of the records as legal documents and for the preparation of statistical tabulations which are usually old. This paper is not intended to minimize the legal or statistical value of the records but rather to point out another very important use which is sometimes overlooked—the first-aid which they may give to health workers in checking epidemics and arresting deaths from preventable causes.

There has been an unnecessary loss of human life due to procrastination or negligence in disseminating promptly the information available in the various vital statistics departments. The U. S. Bureau of the Census furnishes current releases for various states and weekly releases for 69 cities. The U. S. Public Health Service publishes weekly current releases not only for the United States but also for foreign countries. This material is of tremendous value and provides the health worker a picture of what has taken place. These releases and others which are too numerous to mention have their place and provide a very necessary and valuable part of the public health program. The major part of the material in the releases to which I have just referred originated in the offices of the registration executives and while the information is important to the state and to the United States in observing what has already happened, there appears to be entirely overlooked the use that may first be made by local or smaller units.

Morbidity reports, if complete, are of much more value in epidemiological work than are the mortality records. In most states, however, morbidity reports are very incomplete, and warnings of epidemics are often first discovered through the mortality records. The state registration executive, therefore, has a definite responsibility and an important part in coöperating with health officials.

In efficient state registration, the first prerequisite is to have a very close working basis with the state health officer or state commissioner of health. The vital statistics department is not faithfully performing its duty until the state health officer has been informed currently of what is happening in the state as pictured by the vital statistics records. Some states wait for the U. S. Bureau of the Census tabulations before they really know what has happened within their own boundaries. In many other instances, the tabulations are made annually by the states or current releases given quarterly and semi-annually in tabular form by city or county units. This is not real coöperation with the state health officer.

In many states, the vital statistics department does not receive sufficient appropriation, is not rated in importance

*Read before the Vital Statistics Section of the American Public Health Association at the Sixty-third Annual Meeting in Pasadena, Calif., September 7, 1934.

with other departments of the state board of health, but is rather considered just a bookkeeping department. This under-rating of a vital statistics department is largely the fault of the registration executive himself. The volume of routine work necessary to build a vital statistics department and keep it going very often brings those in charge so close to their task that they overlook entirely a wonderful opportunity to give out information promptly that will contribute a real and important asset in the hands of the health officials for stamping out epidemics and curtailing the loss of life from preventable causes.

It is not enough to inform the state health officer as to the number of deaths in the state or in a county from a preventable cause or from a group of preventable causes. He needs more definite information for quick action. For example, Escambia County, Fla., had an unusually large number of deaths from typhoid fever for a number of years. Statistical tables showing the number of deaths from this cause, by counties, had been published at various times but the high average for this particular county as compared with other counties did not receive attention. A spot map was, therefore, prepared indicating the exact location in the county of each death from typhoid fever and the information was placed in the hands of the state health officer who, in turn, directed an investigation to be made immediately. The result was very gratifying. For a decade, there had been an average of 10 deaths a year from typhoid fever in this particular county. The year after the investigation was completed and the source of infection discovered, there were only 3 deaths from typhoid fever in the entire county, and so far this year not a single death.

It was found many years ago that Taylor County, Fla., which is in a malaria district, had the highest death rate from this cause of any county in the state. From 1919 to 1929 there was an average of 15 deaths annually. An anti-malaria campaign was undertaken by the State Board of Health, with the coöperation of the U. S. Public Health Service, and later a regular county health unit put into operation. The result was spectacular in that there has been an average of only 5 deaths from malaria in that county during the past 4 years, which more than justified the expenditure of time and money.

It is only natural that a state registration executive should often be tempted to neglect the study of current data in order to do the more spectacular or pleasant work. Workers in counties having well organized health programs, with few deaths from preventable causes, are making a real contribution to their citizens, with little praise or commendation. On the other hand, the county to which I have just referred is talked about all over the state for the wonderful work and splendid results accomplished. There is very little comment made about a railroad company which has introduced block signals and other important equipment for the prevention of railroad accidents. When a railroad wreck occurs and the engineer performs some unusual heroic feat, his name is in the headlines of every paper because he took a personal risk in order to save the lives of his passengers. If the train service had been efficient enough to prevent the accident, the passengers would have slept in their berths, the train would have arrived at its destination, and the results taken for granted. This, in a way, illustrates the difference between the spectacular results obtained from research work in vital statistics and the control of preventable deaths by the prompt use of information taken from current releases.

Little reference has been made in this paper to current releases as an index for the health worker as their value is

accepted without question. Those who have first access to original data have a real responsibility. Prompt action is necessary for the control of epidemics. The records received in a bureau of vital statistics are carrier-pigeons bringing advance information. A dove carrying a sprig of foliage may not attract particular attention but Noah in his Ark grasped the import of its message.

Certified Milk in Two Pennsylvania Counties

MORE than 2,000 samples of certified milk were examined during the 10-year period from 1923 to 1932 by the milk control laboratory serving 9 suburban boroughs and first class townships near Philadelphia in Montgomery and Delaware Counties, Pa.

In an elaborate statistical analysis of the data on these samples, which were distributed uniformly by months and fairly so by years, a number of interesting facts are brought out. Ninety per cent of the samples were found to contain not over 10,000 colonies of bacteria per c.c., and those exceeding the standard were most numerous in the summer months. Ninety-five per cent of the samples showed the standard butter fat content of 3.5 per cent or more, although out of the total of 2,248 samples one had 7.3 per cent, and another 13.0 per cent butter fat. Only a few of these milks revealed skimming or the presence of visible dirt.

The author points out what is recognized by health officials, that while most certified milks are consistently of excellent sanitary quality, some are occasionally below standard. He does not, however, indicate how many farms, or what individual farms, may have been responsible for lowering the general average of excellence.—David Wilbur Horn. A Survey of Certified Milks. *Hahnemannian Month.*, June, 1934.

Endemic Typhus

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AND
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THE world-wide distribution of the various forms of typhus fever with its increasing incidence in various countries is causing more and more attention to be directed toward this disease. During 1933 large numbers of cases were reported from Asia, Africa, the United States, Peru, Mexico, the Balkan States, Portugal, Poland, and Lithuania. According to the *Medical Officer*,[1] Great Britain, France, Germany, and New Zealand are the only countries which escaped typhus during the early months of 1933.

Old-world typhus with its high fatality rate is of negligible importance in the United States. Occasionally it appears among immigrants, but it has never gained a permanent foothold here. On the other hand, Brill's disease or endemic typhus has shown a marked increase in our Southern States during the past 2 years.

From Table I it will be seen that the morbidity rates for Alabama, Georgia, and Texas have been especially high in 1932 and 1933. The number of cases in Louisiana and Florida has been small, and in Mississippi very few have been reported. For 1932 and 1933 Egypt

TABLE I

TYPHUS FEVER INCIDENCE IN SOUTHERN STATES

1928–1933

	1928	*1929*	*1930*	*1931*	*1932*	*1933*
Florida	0	48	39	28	42	54
Georgia	48	57	134	127	308	625
Alabama	59	72	67	80	237	823
Louisiana	0	1	0	1	17	11
Texas	5	8	13	43	227	398

TABLE II

INCIDENCE OF TYPHUS FEVER

	1928	*1929*	*1930*	*1931*	*1932*	*1933*	
Egypt	599	1,141	288	265	2,298	7,839	
Union of South Africa	1,436	1,778	1,347	1,663	1,664	2,288	(To Nov. 25)
Mexico *	516	741	894	1,684	1,246	989	(6 months)
United States	196	239	510	374	892	1,668	
Poland	2,401	1,988	1,640	2,154	2,283	2,842	
Rumania	983	1,456	1,857	1,419	1,788	1,871	

From the *Epidemiological Report*, Health Section League of Nations
* Deaths.

had more than its normal number of cases, and in Poland and in the Balkan States typhus has been rapidly increasing since 1931. Table II gives some idea of the incidence of this disease for the past 6 years in various countries.

EPIDEMIOLOGY

From earliest times epidemic typhus has been closely connected with filth and human misery. It has been called jail fever, ship fever, and famine fever. Wherever the standard of living has been materially lowered, typhus has almost invariably made its appearance, and this obvious connection had caused many speculations concerning its etiology and method of conveyance.

Otto [2] (1909) from observations made among army troops believed that vermin acted as vectors. Nicolle, Comte, and Conseil [3] (1909) proved that the body louse could transmit epidemic typhus among experimental animals. Soon their work was confirmed by Ricketts and Wilder [4] (1910), Anderson and Goldberger [5] (1912), da Rocha Lima [6] (1916), and others. Since then it has been demonstrated that the spread of epidemic typhus may be prevented if the louse is destroyed. Epidemiological data show that outbreaks are most common in the late winter and early spring when louse infestation is the highest.

In 1898 Brill [7] recognized in the United States a type of fever which, resembling typhoid, gave a negative Widal reaction. He [8, 9] demonstrated its similarity to typhus, but showed that it was milder and less contagious, only one case as a rule being found in a household. He reported that it was most prevalent during the fall instead of late winter or spring. In 1912, Anderson and Goldberger [10] proved that Brill's disease was immunologically identical with Mexican typhus or tabardillo. Naturally this led to the belief that it was louse-borne.

Maxcy [11] (1926) in an extensive epidemiological study of Brill's disease or endemic typhus was at a loss to explain its non-contagious character and its seasonal incidence if he assumed that the louse was the vector. Since he noticed that a larger number of cases appeared among persons handling foodstuffs, he was inclined to believe that rats and mice might be the reservoirs and that the disease was carried to man by fleas, mites or ticks. He emphasized the fact that Brill's disease shows no preference for the lower strata of society and bears no relation to lousiness. The next step was taken when Dyer, Rumreich, and Badger [12] (1931) were able to recover the virus of Brill's disease from rat fleas which had been found in typhus foci.

Rumreich [13] (1933) has pointed out that until 1931 ". . . there was, in spite of Maxcy's fundamental work, much confusion in regard to the probable vector of endemic typhus, and a variety of insects and arachnids were suspected by different workers. Among these vectors were the tropical rat mite, common North American chigger, the body louse, the head louse, the Anopheles mosquito, the bed-bug and the tick. It is now obvious that much of this chaos was due to the fact that two distinct clinical entities were being confused, and for this reason Maxcy's observations were not more widely accepted." The work of Rumreich, Dyer, and Badger [14] (1931) definitely proved that there are in Eastern and Southern United States 2 diseases which are related both etiologically and serologically. One of these is endemic typhus which is transmitted to man by the rat flea; the other is Rocky Mountain spotted fever which is carried by the tick. Although ticks may be infected by intrarectal injection of the typhus virus, the fact remains that, as Dyer [15] (1933) states, " the isolation of spotted fever cases from the true typhus group

TABLE III

SEASONAL DISTRIBUTION OF CASES

Alabama, 1926–1933

	Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
1926	4	1	1	2	3	3	1	5	7	7	4	10
1927	6	1	2	1	1	5	9	7	14	7	8	3
1928	1	2	1	0	0	7	9	12	13	2	4	3
1929	0	3	4	5	4	7	4	11	11	5	12	6
1930	1	2	1	0	6	5	3	11	19	10	6	3
1931	3	2	1	6	1	4	7	12	5	15	13	11
1932	6	3	5	12	9	29	17	26	51	48	17	14
1933	11	8	16	15	39	79	153	129	147	75	92	59
Total	32	22	31	41	63	139	203	213	267	169	156	119

removed all epidemiological evidence that the tick was acting as a vector of typhus fever in the country."

ENDEMIC TYPHUS IN ALABAMA

Typhus fever was first recognized in Alabama in 1922 when a series of cases giving a positive Weil-Felix Reaction were reported by Maxcy and Havens.[16] From that time until 1932 cases continued to be reported—60 to 80 cases each year. The disease has been confined almost exclusively to South and Southeast Alabama, with certain localities showing cases year after year. In 1932 there was a very sharp increase in incidence—237 cases with 11 deaths as compared to 80 cases and 4 deaths the preceding year. This increase continued during 1933 when the cases reached 823 and the deaths 35. From the urban centers the disease spread and much of the incidence is now in purely rural areas and among people who could not have obtained their infection except at home. Association with food establishments is still an important factor in urban cases.

The seasonal occurrence has remained constant during all this time with the summer and fall months accounting for most of the cases. This is contrary to the experience with the epidemic type of the disease.

TABLE IV

DISTRIBUTION OF 1,029 CASES OF TYPHUS FEVER BY RACE, SEX, AND AGE

Alabama, 1932–1933

Age	*White*		*Colored*		*Total*	
	Male	Female	Male	Female	Male	Female
0–4 years	4	10	0	0	4	10
5–9 "	20	15	1	1	21	16
10–14 "	43	31	2	2	45	33
15–19 "	67	24	3	0	70	24
20–24 "	46	26	1	4	47	30
25–34 "	105	51	10	11	115	62
35–44 "	117	52	7	3	124	55
45–54 "	74	46	8	4	82	50
55–64 "	42	20	4	2	46	22
65–74 "	21	11	0	1	21	12
75 + "	3	2	0	0	3	2
Not Stated	66	56	9	4	75	60
Total	608	344	45	32	653	376

Race, Sex, and Age—Maxcy [11] called attention to the relative freedom of the negro from the infection. This holds true, but not to the same extent, since there have been 77 cases reported among colored in the past 2 years. In the 21 counties most concerned the negro population is 45 per cent of the total so that the attack rate among them is only one-tenth that of the white. Males continue to predominate particularly among the whites, and adults are most affected. With the extension of the disease into rural areas, and with the infection being acquired at home, more women and children are being exposed. Table IV shows the distribution of 1,029 cases reported during 1932 and 1933 in which race, sex, and age were given.

Diagnosis—These cases were seen by a number of physicians, but the clinical appearance was sufficiently characteristic in most instances to be readily recognized. During 1933 the laboratories of the State Health Department examined 1,445 specimens of which 461 were positive for the Weil-Felix Reaction, while an additional 81 were classed as doubtful. This compares with 149 positive tests in 1932, 63 in 1931, and 61 in 1930.

Fatality—During 1932 and 1933 there were reported 46 deaths from typhus fever. Based on 1,060 cases reported for these years, this is a case fatality rate of 4.3 per cent, an annual death rate of 0.84 per 100,000 population. This fatality was lower than that for cases reported prior to this period. In the 498 cases reported in 1922–1931, inclusive, there were 38 deaths, a fatality rate of 7.6 per cent. No doubt, the morbidity was reported more completely during the last 2 years and this is a partial explanation of the decrease in the fatality rate. It is apparent that there has been no increase in the fatality with the increased incidence.

Whereas, 73 per cent of the cases in Alabama during the last 2 years were under 45 years of age, only 35 per cent of the deaths occurred in this age period. As shown in Table V, the fatality rate varied greatly with age, being less than 2 per cent for cases under 45 years; 5 to 7 per cent between the ages of 45 and 64 years, and approximately 30 per cent for persons above 65 years of age.

These conclusions are based on the fatality rate for white cases, in so far as the number of colored cases, by age, was too small to warrant analysis. The fatality rate for the colored cases was 11.7 against 3.8 for whites. That the higher fatality rate for negroes may be due, to a considerable extent, to less complete recognition and registration of cases for this group is possible.

TABLE V

CASE FATALITY, TYPHUS FEVER, ALABAMA

(Based on 1,029 Cases)

1932–1933

	Cases *				*Deaths*				*Deaths per 100 Cases*			
	White		Colored		White		Colored		White		Colored	
	M	F	M	F	M	F	M	F	M	F	M	F
0–14 years	75	67	4	4	1	1	1	..	1.3	1.5	(a)	..
15–44 years	376	183	26	20	7	2	4	..	1.9	1.1	(a)	..
45–64 years	130	79	15	7	9	4	1	2	6.9	5.1	(a)	(a)
65 years and over	27	15	0	1	8	5	1	..	29.6	33.3	(a)	..
All ages	608	344	45	32	25	12	7	2	4.1	3.5	15.5	6.3

* Unspecified Ages Distributed

(a) Number of cases too small to make significant rates

It should be noted that when 2 or more causes are given on the death certificate typhus fever is preferred over all other causes except cholera, plague, yellow fever, and deaths from violence. A study of the death certificates for these deaths reveals that on only 11 was typhus fever the only cause given. The most frequent contributory cause was pneumonia, in 14 instances; nephritis in 9; myocarditis in 6; apoplexy in 4; and all other causes, 8. In some instances more than one of these conditions were also noted on the death certificate. A contributing factor to this higher fatality in the higher ages is the fact that these persons were already suffering from a chronic heart or nephritis condition which would have made them poor risks for any infectious disease. In uncomplicated cases the case fatality for endemic typhus is low.

Control—During the past 2 years the disease reached such proportions that it became a serious public health problem. The definite incrimination of rats and rat-fleas as sources of infection naturally pointed to rat destruction as the most feasible means of attack. The area of Alabama most seriously infected corresponds roughly to the peanut growing area so that the rat population was probably large. Nearly all homes visited reported manifest rat infestation. During 1933 many of the towns in the area concerned inaugurated rat control programs—combining poisoning and trapping in most instances. With the inauguration of the CWA work program a larger, widespread program superseded the local efforts and a serious attempt at rat destruction was undertaken in some 21 counties. It is estimated by the Biological Survey that almost 4,000,000 rats were destroyed in this project which closed with the discontinuance of the Civil Works Administration program.

It is too early to determine the effect this wholesale slaughter will have on the typhus incidence during 1934, but the early months of the year have not shown the expected incidence.

At present studies are being conducted as to other possible reservoirs of infection in nature, but the rat is probably the greatest offender. Eradication is almost impossible, but continued effort will materially lessen his menace to the health of the people.

DISCUSSION

Endemic typhus fever, or Brill's disease, has during the past 2 years become a serious problem in Alabama and some other southern states. From foci in certain cities the disease has spread to rural areas and is now widespread.

The original observations of Maxcy as to race, sex, age, and seasonal distribution have been largely confirmed.

The case fatality rate for uncomplicated endemic typhus is low. Much of the mortality is in the older age groups. There has not been an increase in case mortality rates with the increasing morbidity.

The work of Maxcy [11] and of Dyer, Rumreich, and Badger [12] has shown that the reservoir of infection is in the rat and that transmission is by the rat-flea. The mild winter climate, plentiful food supply, and absence of rat-proofing in buildings are all conducive to heavy rat infestation.

An attempt at control of typhus in man through rat eradication was carried out during the early months of 1934 with the effects still to be determined.

Evidently typhus fever has secured a firm foothold in Alabama and is going to require a continuous control program.

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Hop-Picking

AS the occupation is healthy, and financially is reasonably recompensed, there is a holiday element in it which appeals to the city dwellers. If the summer is warm and comparatively dry, it is a real outing for the East End Londoners, but if it is wet the immigration is shorn of much of its attractiveness for, even under the most favorable weather conditions, the health authorities find it extremely difficult to house the invaders, notwithstanding the large number of permanent corrugated iron camps which are dotted all over the areas. In South West Kent alone, and here I borrow my figures from Dr. Galbraith's reports, there are 386 hop farms with 11,548 huts to accommodate the 67,000 pickers who arrive every summer. In many of the camps it is more or less a gipsy life which is led, but pure water is carried into all the camps both for drinking needs and hygienic requirements; the cleaning of camps and the removal of litter have to be attended to, but, despite all efforts, overcrowding is a blot on the family and social life of the camps. . . . One consequence of handling the hops, or as the result of friction of the skin against the catkins and leaves of the plant is the occurrence of an inflammation of the skin. The dermatitis, or "hop rash" as it is called, and due to an irritant evolved from the plant, is mostly observed on the arms. The inflammation may affect the eyes, giving rise to "hoppers' eye," or there occurs what is called "hoppers' gout," an inflammation of joints or a synovitis mainly of the wrists, and probably caused by the repeated and fatiguing movements of the joints in picking.—Sir Thomas Oliver. Disease and Disaster Traceable to Vegetable Sources. *J. State Med.*, July, 1934, pp. 421–422.

EDITORIAL SECTION

Expressions of opinion and statements of supposed facts are published on authority of the writer under whose name they appear, and are not to be regarded as expressing the views of the American Public Health Association, unless such statements or opinions have been adopted by vote of the Association.

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THE PASADENA MEETING

THE 63rd Annual Meeting of the Association will go down in history as one of the most successful ever held. It will be remembered that the special reason for selecting California this year was because it was the 5th anniversary of the foundation of our Western Branch, and our meeting was a con-joint one with that organization. Every arrangement possible was made for our accommodation, entertainment, and pleasure. The hospitality of the people of California was unbounded, and here in the name of the Association we wish to express to our hosts our appreciation.

The scientific sessions were well thought out; there were excellent programs; and attendance was very good. It may be invidious to select certain features, and we possibly would not do so except for the interest of the entire Western Coast as well as throughout the country in the epidemic of poliomyelitis. We had a session devoted entirely to the consideration of the outbreak of this disease in California generally, and Southern California particularly. Every seat in the vast room was filled.

Another notable feature was the session of the Western Branch at which Dr. Walter H. Brown was inducted as president. All the members of the parent organization were invited to attend. It was a dinner session and every seat was well filled, it being necessary to bring in extra tables. The first General Session, on Monday night, at which the President's address was given, was one of the largest meetings, not only of this session but of any session which the writer remembers. This was held in the Main Hall of the Civic Auditorium, a magnificent amphitheater, in which the acoustics were really remarkable. The speakers could be clearly heard in the most remote seats, a feature we would like to recommend widely to the architects of buildings used for such purposes.

Among the special features were excursions through the beautiful orange groves

in which Pasadena is situated. Among the older members, an excursion to Hollywood attracted particular attention, and doubtless the home-town papers will have accounts of meetings with Will Rogers and Mae West.

Wonderful roads have been constructed along the coast, so that one can drive from the extreme southern point up as far as Santa Barbara just along the edge of the ocean, giving a panorama of high mountains which one can almost touch from the car window on one side, and the ocean on the other. The increase in population along the coast has been surprising, and the beaches are thronged by thousands practically every day.

When the invitation was given to visit California we were promised a warm reception—Pasadena has more than made good. However, one can cool off by a dip in the ocean all the year round.

A special feature was the visit to the Huntington Library which, although usually closed at this season, was opened for the Association. It contains the largest collection of Gainsboroughs in the United States. Outstanding among the treasures is the famous Blue Boy. The Library has also acquired a notable collection of early English books, proclamations, orders, and so forth, on public health, which shows that England was very far advanced before the decadent era which ended with Chadwick.

For the fourth year, the general meeting was preceded by the Health Education Institute, under the direction of Dr. Iago Galdston. The attendance was the largest of any year, 208 students having been registered, approximately 80 per cent of whom were from California, the rest from other states and territories. The Institute opened on the morning of August 31, and was continued mornings and afternoons, closing Monday morning.

It will be remembered that the New York Central Railroad arranged for a special train to accommodate representatives from eastern United States and Canada. More than 100 delegates made the trip across the continent. Stops were made at various points such as at the World's Fair in Chicago and at the Grand Canyon. Fortunately the inter-tribal meeting of the Indians was being held at Gallup, N. M., affording the unique opportunity of seeing the Indian ceremonies. The train was met in Pasadena by representatives of the local committee and Dr. J. D. Dunshee, the Health Officer of the state. On the return trip the excursionists were entertained in San Francisco by Dr. Geiger, Director of Health, by Dr. Sippy, at Stockton and Lodi, Dr. True, at Sacramento, Dr. Beatty of Salt Lake City, and Dr. Jaffa at Denver. Altogether the trip on the special train was unusually comfortable.

The scientific exhibits were of unusual interest. Prominent among these was the exhibit of The Deutsches Hygiene Museum. This was accompanied by Dr. Bruno Gebhard, as custodian, and was sent to this country by the Museum which is at Dresden. This was a most gracious action on the part of this organization, and Dr. Gebhard made many friends by his unfailing courtesy and clear demonstrations. The exhibits of Pasadena and Los Angeles were worthy of special notice. The engineering features of the water supply and sewage disposal of Pasadena were particularly well represented. Various excursions to the water shed and plants, afforded to health officers and engineers an opportunity to see them in operation. The State Board of Health had its travelling Plague Unit, fully equipped on hand, and examination of ground squirrels was constantly demonstrated.

The annual banquet held Wednesday evening at the Hotel Huntington was

largely attended. Great interest was shown in the address by J. W. O'Conner, M.R.C.S. from Columbia University, New York.

A notable feature of all the public meetings was the remarkable interest of the public, evidence of their interest and health consciousness. We regret that our constituent countries were not represented by larger delegations, but those who were present were of the highest quality. From Mexico came Dr. Francisco P. Miranda; from Canada, Dr. Robert E. Wodehouse; and Dr. Med. Bruno Gebhard from Germany. Mr. Aime Cousineau and Dr. S. Boucher of Canada were also present.

The words used are entirely inadequate in describing the good features of the Pasadena meeting and the reception given by the warm hearted inhabitants of Southern California.

PUBLIC HEALTH EDUCATION*

From People Who Don't Know You

SEEK opportunities for meeting people who do not know you as the executive—people who belong to the audiences you have been reaching. Seek to learn what they think of various features of the effort. Did they respond to any of the appeals? Did they go to anything? Did they read anything? Do they remember any of the arguments? Did any of the printed matter reach them? Are they with you or 'agin' you or your project?

Budget Exhausted but Not the Demand—More about *Salud y Sanidad* mentioned under "We Salute Colombia!" in the August, 1934, issue:

The address is: Departamento Nacional de Higiene, Sección de Saneamiento Rural, Apartado 2508, Bogotá. The phrase "Para la Vulgarización y Propaganda de la Higiene" is simply a legend defining the purpose of the publication, although we trust that it is neither "vulgar" nor "propaganda," in the English sense.

This little health magazine has had a reception which has really surprised us. We started in 1932 with 6,000 copies and soon found that even by distributing it only to persons who requested it either by letter or in person that the issue was inadequate. We increased the number to 10,000 and later to 15,000, which exhausts our budget but not the demand. It is used in many schools as a text, and we have received a great many flattering comments. In fact, people take it so seriously that it keeps us worried with the fear that errors or disputable material may slip into it. Our effort is to make it scientifically sound first and then simplify the style. The Director of the publication, Sr. Ricardo Bonilla, has achieved a style which is really remarkable for its simplicity and clarity, and that, of course, has been all important in making it a success. We have tried to avoid the sentimental manner of "writing down" to our readers which so often happens when physicians or public health men try to prepare "propaganda."—

George Bevier, M.D.

"Hygeia" for July, 1934—From time to time we list the main contents of *Hygeia*, the outstanding health publication for the general public. We thus supplement the historical record, provided in this department of the *Journal*, of current thought and activities in public health education. We hope also to remind our readers of a variety of easily available source material, and of topics which may merit consideration in state and local publicity.

A Sensible Vacation (editorial); Hazardous summer days; Skin cancer—actual and potential; Your children's eyes; Skeletons not in closets (pictures of Century of Progress exhibits); The campaign against corpulence; Manhattan spastic clinic; Save your child's teeth; Committee acceptance of fruit juices; Some famous victims of smallpox; The story behind the little purple stamp (federal government meat inspection); Refrigerator facts; The parathyroid glands; The hot weather problem in infant and child feeding; The bedbug; Training for athletics and health; Your summer vacation; I want to know: mysterious fluids; New books on health; Questions and answers; School and Health, including A new approach to health education; The challenge of vacation; Health examinations as basis of health education; Clinics now come in classrooms; A bibliography for solving health education prob-

* Please address questions, samples of printed matter, criticism of anything which appears herein, etc., to Evart G. Routzahn, 130 East 22d St., New York, N. Y.

lems; New health books for teachers and pupils.

One Is Free—One You Pay For—Happenings and developments in connection with the current activities of the Milbank Memorial Fund will be reported in the future in the *News Digest*, which it is planned will supplement the Milbank Memorial Fund *Quarterly* in spreading information regarding work in the fields of public health, medical care, and social welfare. While the subscription to the *Quarterly* is $1 a year, the *News Digest* is sent without charge to professional workers in the fields to which the Fund directs its attention (40 Wall St., New York, N. Y.).

Reading References on Child Health and Health Education—The following mimeographed annotated lists are supplied upon request (single copies) to American Child Health Assn., 50 West 50th St., New York, N. Y.:

"Some Recent Contributions to Health Education." A brief list compiled as a service to instructors giving courses in health education. 3 pages.

"Supplementary Reading Materials for Health Education. Grades I–IX." Interesting types of reading suitable for classroom libraries. 6 pages.

"Health Education in Elementary Schools." Brief bibliography for classroom teachers. 6 pages.

"Some References on Child Care and Training for those conducting Child Care Classes in Secondary Schools or Parent-Teacher Groups." 5 pages.

"Some References on the School Lunch." 3 pages.

Riding a Hobby Horse—Public health education will be the better for the riding of hobbies by the workers in public health education. This thought prompts us to mention "Care and Feeding of Hobby Horses," by Earnest Elmo Calkins. This pamphlet of 112 pages "contains 700 suggestions for the use of leisure time" and the bibliography lists 1,500 books and pamphlets for hobby riders. But it is more than lists. Note two chapter headings: "Getting More Joy Out of Life," and "What is Play?" Leisure League, 30 Rockefeller Plaza, New York. *25 cents.*

For the "Women's Crusade"—This fall and winter many non-public health agencies will participate in community chest and other joint money raising efforts. It is anticipated that there will be increased coöperation by large groups of volunteer interpreters, in many cases under the name of the Women's Crusade.

The essence of this effort as a successful supplement to other promotion and publicity efforts is three-fold:

1. Organization and leadership
2. Preparation of usable material
3. Development of methods

Many helps and suggestions will reach the chests through Community Chests and Councils, Graybar Bldg., New York, N. Y., to which you may write for first-hand information if local interest is delayed.

National, state, and local health agencies may help the whole local effort, and better further the part of the health locals by working out ideas and materials suitable and effective for use by the volunteer interpreters.

A new approach would be the use of stillfilms or filmslides. The pocket projector as offered by two manufacturers is no larger than many of the folding cameras and can be used on any light circuit in home, office, or club. Forty or 50 "frames," picture or text units, equivalent to lantern slides, may be thrown on a wall or white card. The audience may be one person, or a group gathered in a home, club, or office.

A big value of the method is that it provides easy talking material for demonstrator and members of the audience.

By having a single projector and one copy of a film, a volunteer, or several

volunteers, could reach 2, 3, or 4 small groups in an afternoon. This could be repeated 4 or 5 days a week through a considerable period.

The amateur movie affords another valuable medium for the fall and winter campaigns. Now is the time to get pictures of camps and any other outdoor health activities.

A third little used medium is the marionette or puppet show. Both have been used successfully by health agencies. Neither has as yet been fully developed to present community, family, or individual health problems in a simple, straightforward way. Either promises considerable usefulness in reaching several types of audiences.

The three new media are described in order of difficulty in getting them into action. All three have the splendid value of offering usable material which can be handled by interested volunteers. All are comparatively inexpensive, and adaptable for use throughout the year, and are effective for groups not so easily reached by other means.

The editor of this department will be glad to tell you where to get full information about any or all of the above.

"Stay Away from Pasadena"—A "warning" issue of *News Letter* of Western Branch, A.P.H.A. (Aug., 1934), was addressed to members of the different sections. We reprint two paragraphs, looking toward the 1935 meeting.

You'll be disappointed in the meeting if you belong to any of the following groups:

Public Health Educators are satisfied with their efforts to teach health in schools, health departments, among the general public, and in industry; are satisfied that their school medical and nursing program is a supreme educational experience for the child; know why some educational efforts succeed and others fail; get the utmost coöperation from their daily newspapers and radio broadcasting stations; know how to reduce dental caries in a school system 75 per cent through educational methods alone; know the technique if selling the health department to the public; know how to discriminate between good and poor publicity material.

A New Type of "Demonstration"—A demonstration in which there are no outside funds, no outside supervision, no increased or exceptional staff members, no "the-world-is-watching-you" appeal.

As a complement to the undoubted values of the public health demonstration projects of recent years we propose for adult health education a different procedure.

The demonstration will start with the present staff and the current available funds of the department or association, local or state.

The one outside factor will be the enlistment of some of the "best minds" in the health education field to help think out the project.

Who is interested in this type of demonstration?

Health Education in August, 1934, Journal—The following articles are of interest to readers of this department:

"The Use of Laymen in Official Public Health Nursing Programs," by Dowling

"Qualifications and Training of Local Health Officers," by Parran & Griswold

"Public Health in Tudor England," by Larkey

"Medical Supervision in the Public Schools," by Gould. Includes paragraph summarizing the "Health Education Program"

For More than Hospitals—All institutional forms of health and medical care could benefit by application of the practical outline offered in "Hospital Ethics, Publicity, and Public Relations," by Dr. W. T. MacEachern. This appears in *Bulletin*, American Hospital Association, 18 E. Division St., Chicago,

Ill. Mention is made of ready-made press material, motion pictures, etc., available for hospital use.

In the opening paragraphs the author tries as others have done to offer a precise definition of "publicity" to find synonymous terms. There doesn't seem to be any satisfactory escape from words which in the course of a long life take on some unpleasant associations. The bad company so often trails right along with the new words. And the meanings of most words are determined by the individual who uses them, as well as by the individual who reads them. Hence we have no adequate word term for the diverse functions of health education and publicity (or health education *or* publicity, or health education publicity).

MAGAZINE ARTICLES

To quote; to write about.

"An Adventurer in the Conquest of Disease," by Theodore Roosevelt, Jr. *Saturday Review*, 25 W. 4th St., New York, N. Y. July 7, 1934. *10 cents*. An appreciative review of "A Soldier in Science," by Bailey K. Ashford.

"Canadian Voodooism" illustrates that "Human credulity provides one of the serious barriers to medical progress." *Canadian Health*, Toronto, Ont. June, 1934. *15 cents*.

"Dividends in Good Health," by Webb Waldron. *Today*, 152 W. 42d St., New York, N. Y. Aug. 11, 1934. 10 cents. "How for $1 a month each family in Elk City, Okla., is assured complete medical and surgical care."

"How Will the Drought Affect Health?" "U. S. Public Health Servive and state health agencies report a rise in typhoid cases"; "play safe" rules for draught area. *Literary Digest*, 354–4th Ave., New York, N. Y. Aug. 18, 1934. *10 cents*.

"Machine Designers Consider Workers." *Literary Digest*. May 26, 1934. Color and other factors in safety and health.

"A Milestone of Childhood," by Dr. H. L. K. Shaw. *New York Herald Tribune Magazine*. July 29, 1934. "Many a 'dull' child is not dull, but sick." Physical and dental examination is urged.

"Poisonous Snakes and Their Bites." *Literary Digest*. May 26, 1934.

"Rules of the Road; A Primer for Motorists," by C. Billings. *Atlantic*. Sept., 1934. The "sane conventions" of safe driving; the increase in accidents; rapid accident increase due to drinking.

"Silicosis, a Major Health Problem in Industry." *Literary Digest*. June 16, 1934.

"Stop Counting Sheep," by R. F. Wadsworth. *Collier's*. June 23, 1934. "When you want to sleep, don't try."

"That Rusty Nail"; "No Host Welcomes These Guests" (cock-roaches). *Everybody's*, 11 W. Summit Ave., St. Paul, Minn. July, 1934. *10 cents*.

"Two Cures for Housing," by Morris Markey. *Saturday Evening Post*. June 25, 1934.

"What Is Health Insurance—And Will It Work?" by E. Sydenstricker. *Literary Digest*. July 7, 1934.

"What's Your Hurry?" *Collier's*. June 30, 1934. Page editorial on automobile accidents.

FOR EDUCATION OR REFERENCE

Usually where no price is given *single specimen* copies will be sent upon request.

"Average Age of Death." State Board of Health, Madison, Wis. An effective bar diagram by years, 1903 to 1933; 40.8 years to 55.4 years, with several decreases indicated.

"A List of Publications—Jan. to June, 1934." U. S. Public Health Service, Washington, D. C. *Free*.

For poison ivy the best help we have

discovered is "Poison Ivy and Poison Sumac and Their Eradication," a Farmer Bulletin of the Dept. of Agriculture. It covers more points as to the nature, control, prevention, and simple handling of these poisons than is otherwise available in one publication, and it is more specific on more points than is usual. Dated May, 1929.

"Instruction in the Effects of Alcohol and Tobacco," by J. F. Rogers, Office of Education. Renewed interest and present status; difficulties and dangers; information sources. 8 pages. Supt. of Documents, Washington, D. C. *5 cents.*

"Warning on Poliomyelitis" and "How to Prevent Poliomyelitis" are two conversations broadcast by Los Angeles County Health Dept., Los Angeles, Calif. 5 and 7 mimeographed pages, supplemented by an 8-page booklet.

From State Dept. of Public Health, Boston, Mass.:

"Aids to Bowel Movement." 4 pages.

"Cooking for Health." 16 pages. Recipes and sample menus.

"The Difference between Tweedledum and Tweedledee." 4 pages. Radio talk which mentions "those words, gonorrhea and syphilis, that people and newspapers and magazines seem to fear so much."

"Food Customs from Abroad." 16 pages. Concise background statements; typical day's menu; food habits; bibliography—for French Canadian, Irish, Italians, Jewish, Near East, Polish, Portuguese.

"Rabies." 4 pages.

"Activities of the Department." 4 pages.

"Vitamins." 2 pages.

"Your Baby's First Teeth." 4 pages.

"Your Second Teeth." 2 pages.

Reprints from U. S. Children's Bureau, Washington, D. C.:

"Child Health 1933–1934," by M. M. Eliot, M.D. Critical review from Children's Bureau and Dept. of Pediatrics, Yale School of Medicine.

"The Need for a More Adequate Program of Maternal Care," by F. C. Rothert, M.D.

From Metropolitan Life Insurance Co., New York, San Francisco, and Ottawa:

"Vaccination Protects You Against Smallpox." 4 page folder.

"The Junior Safety Volunteer." 16 pages. "Tells how persons are frequently hurt on the street and in their homes, and how such accidents can be prevented," with "blank pages, too, for making a list of conditions which you think are unsafe and in need of correction."

"Health Programs in Professional Schools for Teachers." 44 pages. Includes "The Participation Approach in Health Education," "Coöperation of the Staff for Health Education," and "The Health of Students and Faculty."

"The Health of the Teacher." June, 1934, issue of *Health Bulletin for Teachers.*

BOOKS AND REPORTS

The Principles of Heating and Ventilation—*By H. M. Vernon, M.A., M.D. London: Edward Arnold & Co.*, 1934. 232 pp. Price, $5.00.

This work by an expert who has devoted his life to the subject of heating and ventilating and whose works in connection with the Institution of Heating and Ventilating Engineers, the Technical Advisory Board of the National Institute of Industrial Psychology, and particularly as Investigator for the Industrial Health Research Board, is most timely indeed, and should have a large and appreciative reception in America as it may be said to summarize the latest views from a Britisher's standpoint. As a matter of fact, there are undoubtedly more references to research findings and committee reports of American origin than British, but the author has dwelt especially on the relations of the subject to health and physiological functions, which is a welcome innovation in an extensive field of publications dwelling essentially upon the engineering phases. The latter, however, are adequately covered as to principles and better practices, and make up most of the discussion.

The chapter headings involve environmental conditions controlling the heat loss from the human body; heat loss from buildings; heating by means of open fires; heating by hot water, steam pipes, and radiators; low temperature radiant heating; low temperature heating by electricity; the necessity for ventilation; natural ventilation; mechanical ventilation and warm air heating; control of humidity; and air conditioning and special ventilation in industry. Numerous tables and some 50 figures, all very well selected and prepared, are included as well as a good index.

The book particularly discusses the practical aspect of various theories, reduces most technical information to the grasp of the intelligent lay reader who might be interested, and carries annotations at the bottom of the pages to sources of information which the author approves and which are practically all of recent date. The book is meant to be of especial value to architects, factory inspectors, health officials, health and sanitary officials. Notably, the importance of considering effective radiation as well as effective temperature, temperature gradients from floor to ceiling, insulation, new forms of heating, and instruments for use in interpreting atmospheric conditions, are excellently handled. One wishes that terms which may bewilder the less informed were specifically defined, that comment on lower limits of fresh air quantity were extended in view of the rapid spread of cooling devices, and that the author had announced his own conclusions more often after summarizing the facts selected from many sources.

Still, one can read between the lines that the author considers many current practices, *e.g.*, attempting to draw a rational deduction from all of the elements entering into heat loss from buildings, as possible of integration for practical purposes, and thereby explaining failures so noticeable everywhere in ventilation installations of the present day. In a country like America in which this field has been so largely run away with by the commercial interests involved, this book is a source of welcome enlightment indeed.

The publishers are also to be com-

plimented upon placing in compact form, easy access, and good binding, the material comprised between the covers.

It would also be well to read at the same time the little volume put out in 1931, *School Ventilation, Principles and Practices,* representing the final contribution of the New York Commission on Ventilation. The present work endorses most of the Commission's findings, while it adds considerable in the way of new thought and experiences.

EMERY R. HAYHURST

Children of the New Day—*By Katherine Glover and Evelyn Dewey. New York: Appleton-Century,* 1934. 432 pp. Price, $2.25.

A satisfactory method is employed in this book to interpret for parents and guardians the technical reports of the White House Conference on Child Health and Protection. It is presented along lines similar to the volumes appearing in the Century Childhood Library. The main sections of the White House Conference reports are set forth in simple, non-technical language and easy style. The "discussion points" at the end of each chapter present the major findings of the various committees of the Conference.

The book should popularize and extend the information assembled in the more detailed and formidable reports. It offers no easy solution of the problems it presents, but concludes that "perhaps the only real gift we can pass on to children today is awareness."

RICHARD A. BOLT

The Science of Work—*By Morris S. Viteles. New York: Norton,* 1934. 442 pp. Price, $4.00.

This work is essentially a recasting in more popular form of a previous text, *Industrial Psychology,* by the same author. The earlier book was technical and exhaustive, but the present one avoids most of the technical terminology, minimizes tables, resorts more widely to graphic presentation, and relegates the footnotes to an appendix. One other contrast with similar books is a somewhat broader point of view, responsive to problems of the present economic situation. For instance, the desirability of training workers in groups of related jobs to facilitate readjustment if the job is displaced by machine or depression; and the psychological problems of possibly adjusting 10,000,000 white collar workers to manual jobs in the next 10 years; again, where experiments with shortened hours have increased total output, the implications regarding government efforts to shorten hours to increase jobs.

After two chapters from the historical standpoint comes the discussion of employment problems. The procedure of job analysis is outlined, with forms and charts. The use of employment tests are standardized by comparison with ability in the job. The method is illustrated by numerous, brief, well selected examples. The author wisely cautions against the use of such tests by "amateurs."

An outstanding aspect of accidents is the existence of individual susceptibility and the possibility of measuring this by tests. Of equal importance is the study of the individual accident case from a clinical standpoint. Typical case-studies are included. Factors such as fatigue, ventilation, and attitude are discussed. The author recommends "the replacement of a fatalistic doctrine of 'chance' by a dynamic policy of individual mental hygiene in accident prevention."

Training considers practising only correct methods; training on the job rather than in the classroom; initial emphasis on accuracy rather than speed; distributed rather than intensive practice; and practice curves as a guide and for motivation. The author

presents recent data on the psychology of old age, and the possibilities of training older and more experienced workers.

To relieve fatigue by adjustment of hours is complicated by the worker's tendency to adopt a "congenial" pace. The optimal length of day will vary with the industry and even with the job. Efficiency is defined in terms of least physical cost and minimum feelings of fatigue and dissatisfaction—a commendably broad point of view. Experiments are cited on calorimetry during work, rest pauses, posture, intensity of illumination and air conditioning.

Regarding monotony, the author varies from the extreme social viewpoint and believes that only a small minority crave creative experience, while other adjustments are usually possible. Financial incentives have been somewhat overemphasized and we must consider the total personality of the worker. Employees often restrict production in the face of financial incentive. The rôle of "instincts" has likewise been overemphasized. A rather sound approach is to study motives and incentives experimentally just as with accident cases.

Then we have the possibilities of salvaging misfits with personality difficulties rather than discharging them. The approach is a clinical study of individual cases. Attention is called to the effect of long unemployment upon the individual's attitude.

The importance of supervision is considered. When turnover is negligible some supervisors become "real bosses" and loyalty hits a new low. Constructive measures include scientific selection of supervisors, systematic training (centered around case material), and a general "lead" rather than "drive" philosophy of management. Employee representation must be preceded by education as to its purpose and significance.

The author stresses repeatedly the concern of the industrial psychologist with the happiness and contentment of the worker as well as his efficiency. Where necessary the worker should sacrifice economic to human values. Moreover he should be concerned not only with pleasure in work but with enjoyment of hours outside of work—in short, the entire environment.

The reviewer has no particularly adverse criticism. Attempting to cover a large field, the book obviously must touch points lightly and must select rigorously from the large amount of material available. Such selection is well made, and illustrative material is concrete and to the point. Business readers will be interested in the various "forms" provided as those for job specification.

The book obviously is written down to the level of the non-technical reader but remains systematic. It is enlivened by simple line drawings in somewhat cartoon style. Even some of the charts are so embellished. The author might well have carried this slightly humorous flavor into portions of the text. The work is well done and attains its objective. The reader will find it a very good introduction to the field of industrial psychology.

HAROLD E. BURTT

Lord Lister: The Discoverer of Antiseptic Surgery—*By C. J. S. Thompson, M.B.E. London: John Bale, Sons & Danielsson, Ltd.*, 1934. 99 pp. Price, $1.75.

This charming little book has been written to fill what has long been recognized as a need; namely, a short biography for the use of students and general readers. The author has consulted Sir Rickman J. Godlee's biography of Lord Lister, which is justly regarded as one of the great biographies of all time.

The book contains only 93 pages of text. It is written in good style, gives all of the main facts which the public

needs to know of Lord Lister, and ends with a short chapter on "Humanity's Debt to Lister," in which is quoted Sir Frederick Treves's statement: "He is the greatest benefactor of mankind which any age has known. His life and work will live for ever."

The book can be thoroughly recommended, and we wish for it a wide circulation among the profession as well as the laity. Only education can stop some of the innumerable cults which pretend to heal diseases, but which in the main do tremendous damage to the cause of public health.

MAZYCK P. RAVENEL

A Soldier in Science: The Autobiography of Bailey K. Ashford. *With a foreword by Major General M. W. Ireland. New York: William Morrow & Co.,* 1934. 425 *pp.* (Ill.) Price, $3.50.

One picks up an autobiography by a contemporary man of science with a question. Can a man write about his own work with sufficient modesty and yet make an interesting story? Dr. Ashford has achieved a difficult task. Here is the story of experiences just as Colonel Ashford would relate them to his friends in moments of leisure and when all are in the mood for exchanging stories about the War, the laboratory, the campaign for hookworm, or how Puerto Rico got its School of Tropical Medicine.

Just as, through such talk one enjoys the experience of making the acquaintance of a man, so you make the acquaintance of Colonel Ashford. It is such a human story that the reader soon feels he has caught this interesting personality in his laboratory; when he will talk about his Sprue cases, he shows you his beautiful Monilia cultures, and he describes the objections of the scientific world to accepting his point of view on the relation of Monilia psilosis to tropical sprue.

How the Army sent him here and there and how each time he got orders to return to Puerto Rico is a narrative full of such triumphs, humor, and interest that the reader hurries in from one incident to another.

One of the most interesting chapters is the battle for recognition of the fact that the profound anemia of the Puerto Rican peasant was caused by hookworm, and how he spread the news throughout the Island that the anemia "was being cured for the first time in the memory of man—was being cured by certain mysterious little glass balls, together with purges." The clamor that went up to continue this work was so formidable "that gentlemen in frock coats who took no interest whatsoever in such things nervously consented to any proposition that would keep their constituents quiet and satisfied." Here is a story of public health progress that will intrigue any administrator.

Former Surgeon-General Ireland in a foreword reports, "The University of Cairo, conferring an honorary degree upon Colonel Ashford several years ago, introduced him as "Prophet of Tropical Medicine in the New World, who has rendered incalculable services to Science and Mankind." Such services he has no doubt rendered but a story so real and true to this soldier in science will give inspiration and courage to many who will continue to carry on long after Colonel Ashford has inoculated his last guinea pig. Romance and ideals of medical science are portrayed through the richness of experience of Colonel Ashford's life to date.

HAROLD H. MITCHELL

National Quarantine Service, Series IV—*Edited by Wu Lien-Teh, Director, and C. Y. Wu, Senior Quarantine Officer,* 1933.

In the preface to the fourth annual report of the National Quarantine Service of China, the editors state that

it has been their object to make this book a reliable guide to the manifold activities of the Service, and, at the same time, having in mind their obligations as a public body toward lay organizations, such as the mercantile and shipping interests in the country, to present a readable and not too technical account of that section of the work which is most closely connected with the commercial world. In this endeavor they have succeeded admirably.

The volume opens with a series of original articles on plague and cholera, which are not only of absorbing interest, but are of scientific and historical value as well, and should appeal strongly to research workers and quarantine executives. The next section is devoted to a series of well written and informative special articles dealing with the recent public health activities in Shanghai and with the transactions of the Central Cholera Bureau. There is also included an account of the fourth annual dinner of the National Quarantine Service, with a number of the speeches delivered during the evening. Then follow reports of the Administrative, Boarding, Fumigation, and Medical Services Division, and of the branch stations at Amoy, Chinwangtao, Tientsin, Taku-Tangku, Wuhan (Hankow), and Canton, all of which should especially make a ready appeal to non-medical readers interested in port health development in China. The book is brought to a conclusion by the insertion of a list of the personnel of the Quarantine Service at headquarters and at the branch stations.

The report shows that, notwithstanding the political and economic disorder which prevailed in China during the year, steady improvement was made in all branches of the Service. Two of the more outstanding achievements of the year, in addition to the maintenance of the work of medical inspection and fumigation on an efficient basis, were the continuation of the rat-flea survey of Chinese ports which was begun in 1931, and the inauguration, in 1933, of systematic experiments upon the occurrence and viability of cholera and related vibrios in Shanghai waters. Comprehensive accounts are given of the results so far obtained.

A plan to produce a series of monographs on the infectious diseases commonly occurring in China was launched toward the end of the year by the publication of the first volume—a manual on cholera, compiled by senior members of the Quarantine Service. While this monograph was written especially for the medical profession of China, it covers a wide field and should be generally useful to the medical profession throughout the Far East and also to anyone engaged in an extensive study of the cholera problem.

During the year, a site was acquired for a new quarantine station at Shanghai, and plans were perfected for the erection of up-to-date buildings to house the various activities. Upon the completion of this station, the quarantine facilities at Shanghai are expected to be adequate for practically any emergency.

In spite of the great difficulties under which the Chinese National Quarantine Service has labored since its inauguration in 1930, it has carried out many helpful reforms and has greatly enlarged the scope of its activities.

Research has been persistently prosecuted into many problems intimately affecting the public health of the country. At the same time, regular contact has been maintained with international organizations such as the International Office of Public Hygiene and the Health Section of the League of Nations. The year 1933 saw the realization of efforts to place on a satisfactory basis the collection and dissemination of epidemiological information relating to Chinese ports. Weekly

bulletins of communicable diseases were distributed regularly to port and city health authorities in China and neighboring countries.

The editors have contrived to give a great deal of information in compact form, without over-elaboration; yet everywhere the sentences flow smoothly and make pleasant reading. One color plate and 27 half-tone illustrations are attractive features of the book, while numerous charts and tables add to its value. The report is cordially recommended to the readers for whom it is designed.

F. A. CARMELIA

The Savannah Cook Book. *A Collection of Old Fashioned Receipts from Colonial Kitchens—Collected and Edited by Harriet Ross Colquitt, with an introduction by Ogden Nash. New York: Farrar & Rinehart,* 1934. 186 pp. Price, $2.00.

> Now, good digestion wait on
> appetite,
> And Health on both!

During the last few years, in a number of our cities which are famous for their cooks and cookery, there have arisen loyal citizens, mostly women, who have collected the "receipts" for which the particular city is famous. There is no pretense that this book is written in the interest of public health, and probably the authors would not pass very outstanding examinations on balanced rations, vitamins, etc.

We have no wish to force a point, but believe that the researches of Cannon, Pavloff, and others, have demonstrated the value of the esthetic point of view in the preparation and service of foods. From the economic standpoint it may be emphasized that rice, which furnishes the main article of food for approximately one-third of the population of the world, is not sufficiently eaten, possibly because it is not properly prepared, in a large part of the United States. The book before us is especially strong in methods for preparing sea foods and rice dishes, and can be heartily recommended.

MAZŸCK P. RAVENEL

You Must Relax—*By Edmund Jacobson, M.D. New York: McGraw-Hill,* 1934. 201 pp. Price, $1.50.

The author's attempt is to explain—to the layman—"how to relax while you are working, playing, or resting."

The general thesis of this text is apparently: "In the rush of the present day, man has in part forgotten how to live."

After discussing various types of tense persons, and the causes of overactive nerves, the author takes up the various means of artificially soothing the nervous system; drugs, massage, hydrotherapy, change of environment, diet, and rest.

He then launches into his main idea—cultivated relaxation. Relaxation is a habit and like any habit may be cultivated by regular daily practice. Among others, there are chapters on "How to Relax Lying Down," "How to Relax while Active," "Relaxing Worry," "The Quest for Sleep," and on "Indigestion and Colitis and on Blood Pressure as related to fatigue of the nervous system—over-emotion."

This is a worthwhile book which it will repay both laymen and physicians to read carefully. It brings to the fore the close relationship between agitation and other mental states, and such health factors as intestinal upsets, blood pressure, and nutritional states, and prescribes a method whereby the one afflicted may bring about his own relief.

CHARLES H. KEENE

Manual of Nursery School Practice—*By Iowa Child Welfare Research Station. Bulletin of the State University of Iowa, New Series, No. 730,* March 10, 1934. Price, $1.00.

This is a well conceived and executed

manual of the development and present status of preschool practice at the Iowa Child Welfare Research Station in Iowa City. Following several introductory chapters on the nursery school idea and preschool education, a detailed description is given of housing, equipment, personnel, and technics used at the Iowa Station. These are illustrated beautifully and appropriately with photographs taken on the premises. The reading material is arranged conveniently for reference.

Its completeness leaves no doubt as to what the research projects are and how they are being pursued in detail. Typical daily schedules are given for each age group. A complete set of record blanks is reproduced. The "developmental record" should prove of especial interest to those engaged in nursery school work. Ten full pages of excellent reference on nursery schools and nursery education complete the bulletin.

This informative and helpful manual is recommended highly to all those interested in preschool education and in the nursery school movement.

RICHARD A. BOLT

Military Medical Manual—*Produced for The Military Surgeon by The National Service Publishing Company, Washington, D. C.,* 1934. 774 pp. Price, $4.50.

Adequate preparedness for national defense is one of the best preventives of war. Since, however, the human race seems to display a biological tendency toward conflict, war may be inevitable. In a world fairly seething with international distrust, belligerency, and arrogance, military preparedness is a positive safeguard, by making possible a more effective defense.

In time of war, no branch of the military forces is more important than the army medical department, the mission of which is to prevent disease and conserve health, as well as to care for the sick and wounded.

The information needed by officers of the Medical Department of the U. S. Army, which includes members of the Medical, Sanitary, Dental, Veterinary, and Medical Administrative Corps, is set forth in a comprehensive manner in this excellent manual, which should be owned and studied by every reserve officer in these services. In the 17 parts of this well printed book will be found useful and interesting material on military policies, administration, organization, law, hygiene, sanitation, hospitalization, evacuation, and medico-military science.

As Surgeon General Robert U. Patterson states in a brief foreword, *The Military Surgeon* has performed a real service in making available this volume covering the whole range of subjects in which patriotic members of the medical and public health professions should be proficient.

JAMES A. TOBEY

The Road to Adolescence—*By Dr. Joseph Garland. Cambridge, Mass.: Harvard University Press,* 1934. Price, $2.50.

This is a book that deserves wide reading. It is a successful attempt to bring together in a usable form for those concerned with growing youth the more important results from long experience and recent studies. The author evidently has first-hand knowledge of his subject and is familiar with the latest contributions.

All through the book runs a vein of conservative common sense; new ideas and suggestions are wisely evaluated, and the conclusions expressed in a terse and interesting style.

It is gratifying to see the importance that is placed upon the kind of material our children receive through inheritance, and upon the value of eugenics, a science which, as yet, is receiving too little practical attention.

Subsequent chapters discuss the anatomy and physiology of the growing child, the care of the body, nutrition and diet, the recognition and care of sickness, vaccines and serums, first aid to the injured, home, school and camp, and special problems in education, with a final word—"As the twig is bent," in which the environment of the home and the responsibility of parents for developing the latent possibilities of their children are tactfully but vigorously stated. "We cannot turn the potato into a lily or the oak into a willow," says the author, "our province is to make our potatoes the best in the countryside and our oak the sturdiest in the forest."

The various factors that play a part in this complicated problem—the home, the school, private or public, occasionally beginning with nursery school and kindergarten, special classes for special problems, the value of proper play and exercise—are all discussed with that wisdom which only results from intimate knowledge. One regrets that the value of the midday rest for all children under 7 years is implied but not emphasized. Dr. Garland's book discourages fads in child care and training but is replete with many facts and suggestions which should be of real assistance to those who wish to be guided wisely in this difficult field.

A job of each generation is to produce children of the best possible material and then to prepare them adequately in body and mind for their future tasks. To this great endeavor in our day this book is a helpful contribution.

J. H. MASON KNOX, JR.

BOOKS RECEIVED

DIPHTHERIA—PAST AND PRESENT. By J. Graham Forbes. London: John Bale, Sons & Danielsson, 1932. 832 pp. Price, $15.00.

LORD LISTER. THE DISCOVERER OF ANTISEPTIC SURGERY. By C. J. S. Thompson. London: John Bale, Sons & Danielsson, 1934. 99 pp. Price, $1.75.

THE SAVANNAH COOK BOOK. By Harriet Ross Colquitt. New York: Farrar & Rinehart, 1933. 186 pp. Price, $2.00.

THE SPASTIC CHILD. A Record Successfully Achieved Muscle Control in Little's Disease. By Marguerite K. Fischel. St. Louis: Mosby. 97 pp. Price, $1.50.

EGGS. By Mary E. Pennington, Frank L. Platt, Clara G. Snyder and Paul Mandeville. Chicago: Progress Publications, 1934. 631 pp. Price, $2.00.

THE LABORATORY NOTEBOOK METHOD IN TEACHING PHYSICAL DIAGNOSIS AND CLINICAL HISTORY RECORDING. By Logan Clendening. St. Louis: Mosby, 1934. 71 pp. Price, $.50.

TEXT-BOOK OF MEAT HYGIENE. 6th ed. By Richard Edelmann, John R. Mohler and Adolph Eichhorn. Philadelphia: Lea & Febiger, 1933. 474 pp. Price, $5.50.

MOTHERS' GUIDE WHEN SICKNESS COMES. By Roger H. Dennett and Edward T. Wilkes. New York: Doubleday, Doran, 1934. 400 pp. Price, $2.50.

INFLUENZA. Part II. Annals of the Pickett-Thompson Research Laboratory. By David Thomson and Robert Thomson. Baltimore: Williams & Wilkins, 1934. 1557 pp. Price, $17.50.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Controlling Contagion—Preventive measures to be used against scarlet fever, diphtheria, measles and whooping cough are all covered in this interesting British symposium.

BANKS, H. S., *et al.* Control of the Common Infectious Diseases. Pub. Health 47, 11:348 (Aug.), 1934.

Protecting Against Tetanus—Alum precipitated tetanus toxoid in 2 doses of 1 c.c. given 3 months apart produces a state of immunity which affords protection if a third 1 c.c. dose is given at the time of injury.

BERGEY, D. H. Active Immunization Against Tetanus Infection With Tetanus Toxoid. J. Infect. Dis. 55, 1:72 (July-Aug.), 1934.

Showing Up the Supposed Cancer Increase—Studied by age groups in New York City, it appears that there has been no increase of "visible" cancer (skin, breast, buccal cavity, female genitals), in the last three decades. From this it may be inferred that the increase in "invisible" cancer is due to better diagnosis.

BOLDUAN, C., and WEINER, L. Is Cancer More Prevalent? Am. J. Cancer 21:4:825 (Aug.), 1934.

Experiments in Health Insurance—Trials and tribulations of projects in mutual medical service in California are reported with every evidence of impartiality.

BROWN, P. K. California's Medical Mix-Up. Survey Graphic 23, 9:429 (Sept.), 1934.

Tuberculous Children — Among 6,000 New York children admitted to hospitals, 13 per cent of the boys and 15 per cent of the girls reacted positively to tuberculin: among 2,000 attending "well" children clinics there were about the same percentage of reactors; while among 6,000 attending tuberculosis clinics half were reactors. Rates in other cities are compared.

DROLET, G. J. The Incidence of Tuberculous Infection among Children in New York City. Am. Rev. Tuberc. 30, 1:1 (July), 1934.

It Goes for Us too—Four British authorities answer the question: Are We Satisfied with the Results of Antenatal Care? The net answer seems to be: No, but the outlook is hopeful.

FAIRBAIRN, J. S., *et al.* Are We Satisfied with the Results of Antenatal Care? Brit. M. J. 3839:193 (Aug. 4), 1934.

Trichinosis Increases in New York—A 5 year study including 166 cases of trichinosis emphasizes anew the extreme importance of adequate cooking of pork and pork products.

FRANT, S. Five Years' Experience with Trichinosis in New York City. Pub. Health Rep. 49, 30:869 (July 27), 1934.

Polio Comes Early to California—Steps taken to deal with a California outbreak of poliomyelitis are outlined in this preliminary report. One finding noted is that affected individuals may be found in all age groups. The term "infantile" is inappropriate.

GEIGER, J. C., *et al.* Acute Anterior Poliomyelitis. J.A.M.A. 103, 5:342 (Aug. 4), 1934.

Decent Rivers—Progress is reported in the movement to enact laws to prevent stream pollution, and stream con-

trol agencies are functioning in ever wider areas—so it is claimed. May they continue to prosper!

HOSKINS, J. K. Stream Pollution Control. Water Works Eng. 87, 16:870 (Aug.), 1934.

Prompt Diphtheria Immunization—That alum precipitated toxoid immunizes quickly against diphtheria is evidenced by this study in which better than 90 per cent of the subjects were rendered Schick negative from 40 to 90 days after treatment with 1 c.c. dose.

KELLER, A. E., and LEATHERS, W. S. Alum Precipitated Diphtheria Toxoid. J.A.M.A. 103, 7:479 (Aug. 18), 1934.

More Health Insurance—Methods for providing medical services for everybody are discussed in stimulating detail. Answers to these questions are proposed: who shall be covered? what services shall be given? how will they be paid for? how shall the service be administered?

KINGSBURY, J. A. Health Insurance for American People. Pub. Health Nurs. 26, 8:423 (Aug.), 1934.

Milk as a Vehicle for Vitamin D—Crystalline vitamin D added to milk was more potent as an antirachitic factor than when administered dissolved in oil. Antirachitic agents must be given directly to nursing infants; feeding the mother cannot be relied upon as a method of administration.

LEWIS, J. M. Clinical Experience with Vitamin D Milk. New York State J. Med. 34, 15:685 (Aug. 1), 1934.

When Health Education Is Neglected—Immunization against diphtheria and/or smallpox vaccination when done are in most instances medical services rendered without the accompaniment of effective health education. The results are obvious.

PALMER, G. T., and DERRYBERRY, M. Medical and Public Health Attitude toward Smallpox Vaccination and Diphtheria Immunization. New Eng. J. Med. 211, 9:413 (Aug. 30), 1934.

Influencing Human Behavior—Among Ontario children a wide variety of health habits was discovered in respect to eating wholesome meals, good sleeping habits, and the like. The beneficent effects of health education were not pronounced.

PHAIR, J. T. Survey of Health Habits among School Age Children. Canad. Pub. Health J. 25, 8:380 (Aug.), 1934.

What Expectant Mothers Need—In a country-wide sampling and study of maternal deaths it was found that a third were caused by abortions. Of those mothers that might have had prenatal care, more than half had none, a fourth had poor care, only an eighth had reasonably good care.

ROTHERT, F. C. The Need for a More Adequate Program of Maternal Care. Pub. Health Nurs. 26, 8:407 (Aug.), 1934.

For Lady Nicotine's Devotees—Cigarette smoking produces a marked drop in surface temperature of fingers and toes, slows the blood flow in the capillaries. Nicotine is one of the toxic factors, but carbon monoxide is not. It will be interesting to see how these findings will be used in cigarette advertising.

WRIGHT, I. S., and MOFFAT, D. The Effects of Tobacco on the Periferal Vascular System. J.A.M.A. 103, 5:318 (Aug. 4), 1934.

ASSOCIATION NEWS

OFFICERS, 1934–1935

President, EUGENE L. BISHOP, M.D., Nashville, Tenn.
President-elect, WALTER H. BROWN, M.D., Palo Alto, Calif.
First Vice-President, J. C. GEIGER, M.D., San Francisco, Calif.
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Chairman of Executive Board, THOMAS PARRAN, JR., M.D., Albany, N. Y.

1935 MEETING IN MILWAUKEE

EUGENE L. BISHOP, M.D., PRESIDENT
WALTER H. BROWN, M.D., PRESIDENT-ELECT

WITH the Sixty-third Annual Meeting in Pasadena, Calif., Haven Emerson M.D., retired from the office of President of the A.P.H.A., which office he has so ably filled during the past year. E. L. Bishop, M.D., who was President-Elect, became President, to serve for the year 1934–1935. For two years preceding Dr. Bishop's election as President-Elect, he served as Chairman of the Executive Board. It will be remembered that he was instrumental in the organization of the Southern Branch A.P.H.A. He is Ten-

Eugene L. Bishop, M.D.

Walter H. Brown, M.D.

nessee State Commissioner of Public Health, and now serving also as Director of Health of the Tennessee Valley Authority, Knoxville, Tenn. Dr. Bishop has been a member of the A.P.H.A. since 1921, and a Fellow since 1924. He is a Life Member.

The new President-Elect is Walter H. Brown, M.D. of Palo Alto, Calif. He is one of a small group of public health workers actively engaged in promoting a well organized public health program in the Far West. He is President of the Western Branch A.P.H.A., which celebrated its Fifth Anniversary by a joint meeting with the parent Association in Pasadena. Dr. Brown will bring to his duties a sympathetic understanding of the problems and needs of the active health worker, based upon a broad experience as an administrator and teacher.

Dr. Brown was graduated from Jefferson Medical College, Philadelphia, in 1906; he practised medicine in Richlandtown, Bucks Co., Pa., 1906–1913; was graduated from Harvard-M.I.T. School for Health Officers in 1914; was Epidemiologist of Massachusetts State Department of Public Health, 1914–1915; Health Officer of Bridgeport, Conn., 1916–1919; Associate Director of Health Service, American Red Cross in Washington, D. C., 1919–1920; with the Rockefeller Foundation 1920–1921, assigned to the Commission for Prevention of Tuberculosis in France; Director of Child Health Demonstration, 1921–1925, conducted at Mansfield, Ohio, under the direction of the National Child Health Council, on a grant by the American Red Cross; with the Commonwealth Fund of New York City, 1925–1927, assigned to the Directorship of the Child Health Demonstration in Marion Co., Ohio; and since 1927, has been Professor of Hygiene, Leland Stanford University, Palo Alto, Calif.

Dr. Brown has been a member of the A.P.H.A. since 1915, and a Fellow since 1922.

RESOLUTION ON THE DEATH OF DR. FREDERICK W. SEARS

DR. Frederick W. Sears of Syracuse, New York, died suddenly in Butte, Montana, on August 30, 1934, while on his way to attend the meeting of the Association. Dr. Sears has been a Charter Fellow of the A.P.H.A. since 1922 and a member since 1914, and took an active part in its affairs. At the height of a successful career, Dr. Sears gave up his large surgical practice in order to devote his full time to service in the New York State Department of Health.

During his 20 years as State Sanitary Supervisor and District State Officer, he not only showed rare administrative talents and teaching ability but also became known for his important contributions to preventive medicine. He was a pioneer in diphtheria immunization, a procedure demonstrated to be practical and effective by Dr. Sears, long before its general adoption, and carried on by him until his death with the collection of one of the largest known series of individual records.

Therefore BE IT RESOLVED, that the members of the A.P.H.A. record their official recognition of the distinguished service to public health, rendered by Dr. Sears, at the same time expressing their deep sorrow in the loss of a valued member and a friend of unfailing kindliness and great personal charm; and be it further

RESOLVED, that this resolution be spread upon the records of this meeting, and that it be transmitted to Dr. Sears' family.

SEDGWICK MEMORIAL MEDAL

AT the Pasadena meeting the Sedgwick Memorial Medal for distinguished service in public health was awarded Edwin Oakes Jordan, Ph.D., Department of Hygiene and Bacteriology, University of Chicago. Dr. Jordan is a graduate of M.I.T., 1888, and served as Chief Assistant Biologist of the Massachusetts State Board of Health immediately after graduation. He was Lecturer in Biology at M.I.T. at the same time, being thus associated with Prof. William Thompson Sedgwick in whose name the medal is granted.

Dr. Jordan was called to the University of Chicago in 1892, when the university was founded. He was an associate in the department of anatomy where he began the teaching of bacteriology, instructor, assistant professor, associate professor, and finally professor of bacteriology. He held his departmental chair in bacteriology from 1907 and the chairmanship of the Department of Hygiene and Bacteriology from 1914 until a few years ago. He was then appointed to a Distinguished Service Professorship which he held until he retired from formal teaching and administration in the University of Chicago. He has many scientific papers to his credit. His textbook of *General Bacteriology*, probably his best known work, was published in 1908. In 1917 appeared *Food Poisoning*, in 1924, *A Pioneer in Public Health—William Thompson Sedgwick* of which Dr. Jordan was one of the three authors. In 1927 he published *Epidemic Influenza*. In 1928 *The Newer Knowledge of Bacteriology and Immunology* came out, by Dr. Jordan and Professor Falk. He was a member of the International Health Board of the Rockefeller Foundation from 1920 to 1926.

In recent years Dr. Jordan has been a leading member of the Board of Health of Chicago. The full list of activities, connections, and notable services is a very long one. He has been a member of the A.P.H.A. since 1899 and became a Charter Fellow in 1922. He did much work in the development of the Standard Methods of A.P.H.A.

NEW MEMBERS

The following list includes applicants who have been approved for membership in the A.P.H.A. by the Sub-Committee on Eligibility. These new members have requested affiliation with the sections indicated, and action by the Section Councils will follow.

Health Officers Section

Clarence I. Drummond, M.D., Court House, Medford, Ore., County Health Officer

Frank H. Garriss, M.D., Windsor, N. C., Bertie County Health Officer

David B. Tuholski, M.D., 93 Main St., Brockton, Mass., Health Officer

Louis S. Welty, M.D., Denton, Md., Deputy State and County Health Officer

Laboratory Section

Branch J. Aymond, M.D., Rapides Parish Health Unit, Alexandria, La., Acting Director

Theodore D. Beckwith, Ph.D., 405 Hilgard Ave., Los Angeles, Calif., Professor of Bacteriology, University of California

William N. Berg, Ph.D., 104 Fifth Ave., New York, N. Y., formerly with Bureau of Animal Industry, Washington, D. C.

George E. Coleman, 609 Hot Springs Road, Santa Barbara, Calif., Research Associate in Medicine, Hooper Foundation, University of California

Gerard Laviano, M.D., 381 Myrtle Ave., Albany, N. Y., formerly with Division of Laboratories and Research, N. Y. State Dept. of Health

Horace H. Selby, 3787 California St., San Diego, Calif., Chief Chemist, Hage's Ltd.

Public Health Engineering Section

Joseph M. Sanchis, B.S., 207 S. Broadway, Los Angeles, Calif., Chemist, Dept. of

Sanitary Engineering, Bureau of Water Works and Supply

Orra Shonyo, Blytheville, Ark., District Supervisor, Sanitation and Malaria Control

Industrial Hygiene Section

Jorge L. Collada, C.E., Colima 60, Mexico, D.F., Mex., Civil Engineer, Industrial Hygiene Dept.

Food and Nutrition Section

Robert N. Berry, B.A., 55 S. Second West, Logan, Utah, Bacteriologist and Chemist, Morning Milk Co.

M. F. Brobst, B.S., 757 Revere Rd., Glen Ellyn, Ill., Charge of Nutrition and Vitamin Studies, Health Products Corp.

Edward M. Chace, 148 S. Mission Rd., Los Angeles, Calif., Chemist, U. S. Dept. of Agriculture.

Mrs. Eva B. Cronk, 1339 Vista St., Hollywood, Calif., Lecturer on Home Economics

James R. Esty, Ph.D., 322 Battery St., San Francisco, Calif., Director, Western Branch Laboratories, National Canners Assn.

Sophia S. Halsted, B.S., Dept. of Health, Detroit, Mich., Director of Nutrition

Margaret C. Smith, Ph.D., Dept. of Nutrition, Univ. of Arizona, Tucson, Ariz., Nutrition Chemist

Child Hygiene Section

Lenore H. Gageby, M.D., 4517 Lomita St., Los Angeles, Calif., School Physician, City Schools

Helen B. Pryor, M.D., 626 Tennyson Ave., Palo Alto, Calif. (Assoc.)

Public Health Education Section

Maurice LeBosquet, Jr., 231 S. LaSalle St., Chicago, Ill., Sanitary Engineer, Byllesby Engineering and Management Corp.

Paul Neiman, 826–33 Ave., San Francisco, Calif., General Secretary, San Francisco Tuberculosis Assn.

Reginald H. Smart, M.D., County Health Dept., Los Angeles, Calif., Consultant Physician, Tuberculosis Division

Louise E. Taber, M.D., 1944 Webster St., San Francisco, Calif., Division of Child Welfare, Dept. of Public Health

Helen L. H. Woodroffe, M.D., 844 Seventh St., Santa Monica, Calif., School Physician, City Schools

Public Health Nursing Section

Mrs. Guy W. Atwood, R.N., Route 6, Chattanooga, Tenn., County Nurse

Margaret L. Boyle, R.N., Health Dept., Worcester, Mass., Supervisor of Nurses

Lucinda Gonawein, 1016 Rawson Place, Fremont, O., School Nurse

Florence C. Johnson, R.N., 133 E. Haley St., Santa Barbara, Calif., Director of Nursing, Santa Barbara Visiting Nurse Assn.

Rachel K. Miller, R.N., 906 Blair Ave., Oakland, Calif., formerly Supervisor of Public Health Nursing, City Health Dept.

Mellie F. Palmer, R.N., 629 Third St., Des Moines, Ia., School Nurse

Phoebe E. Sheppard, Eagle Butte, S. D., Indian Field Service

Unaffiliated

Imogene H. Abbey, 328 N. Balcom Ave., Fullerton, Calif., Public Health Nurse, Orange County Health Dept.

Chesley Bush, M.D., Livermore, Calif., Medical Superintendent, Arroyo Sanatorium

Mabel G. Flanley, M.S., 4417 White Bldg., Seattle, Wash., Secretary-Manager, Washington State Dairy Council

Minerva B. Pontius, M.D., 123 S. East 1st St., Evansville, Ind., formerly Assistant Physician, State Hospital for the Insane

NEWS FROM THE FIELD

NEW MEXICO ASSOCIATION ELECTS OFFICERS

AT the meeting held in Los Vegas, N. Mex., July 17–18, new officers of the New Mexico Public Health Association were elected as follows:

President, Eugene P. Simms, M.D.
Vice-President, W. E. Kaser, M.D.
Secretary-Treasurer, Eleanor L. Kennedy, R.N.

The next annual meeting will be held in Santa Fe, April 30, May 1, 1935.

ITALIAN DECREE PROVIDING FOR THE PROTECTION OF WORKING MOTHERS

General Provisions—The decree of March 22, 1934, providing for the protection of working mothers in Italy coördinates and amends the previous legislation on this subject. The number of women affected is much larger than heretofore, because the decree applies to workers in practically all occupations—all workers except domestic servants; wives and other near relatives of employers; home workers under certain conditions; employees of the National Government, the provinces, the communes, and public benevolent institutions; public school teachers, if provision for their protection is not made otherwise; and agricultural workers. However, the provisions of the decree may be extended to women engaged in heavy agricultural labor if this is recommended by the Minister of Corporations.

Facilities for Nursing Mothers—An employer must permit every nursing mother to have two daily periods of 1 hour each in which to nurse her child, exclusive of the regular rest periods provided by law. The owner of every establishment employing 50 or more women between the ages of 15 and 50 must provide a special room for nursing, unless there is in the neighborhood an infant welfare station where the mother may nurse her child conveniently. The nursing room must be well lighted, ventilated, and heated during the cold season; it must be kept clean and must be supplied with drinking water. If such a nursing room is provided in the establishment the nursing periods may be reduced to ½ hour each.

In establishments employing 100 women or more between 15 and 50 years old, factory inspection authorities may require the employment of a trained staff to care for the children of women employees while the mothers are at work.

Compulsory Insurance, Benefits and Premiums—Every woman between 15 and 50 years of age engaged in any of the occupations to which this decree applies is obliged to take out maternity insurance unless her wages are more than 800 lire a month. The maternity insurance is administered by the National Maternity Fund. The insured woman receives 300 lire in case of childbirth (twice the amount paid under the old law) and 100 lire in case of spontaneous or therapeutic abortion if it takes place after 3 months of pregnancy. The daily payment of half a lire to expectant mothers unable to work has been discontinued. A woman loses her right to the maternity benefit if she has been sentenced for infanticide or self-induced abortion, or in case of spontaneous or therapeutic abortion if she fails to present her claim within 30

days. A woman who enters other employment while she is on leave because of pregnancy and childbirth loses a part of her benefit.

Every woman carrying maternity insurance must pay 3 lire annually, to which the employer must add 4 lire. Any agreement to the contrary between employer and worker is prohibited by the decree.

The Government subsidizes the National Maternity Fund to the extent of 18 lire for each childbirth or abortion.

Penalties are provided for violations of this decree, which will become effective upon publication of the regulations for its administration.—*Gazzetta Ufficiale del Regno d'italia*, Rome, No. 99 (Straordinario), 1934; texts of previous legislation.

NEW YORK SEWAGE WORKS ASSOCIATION MEETS

THE Fall Meeting of the New York State Sewage Works Association will be held at Oneonta, N. Y., October 5 and 6.

ALABAMA HEALTH UNIT REOPENS

ACTIVITIES in the Coffee County Health Unit have been resumed, with the appointment of Dr. William A. Stanley, of Union Springs, Ala., member A.P.H.A., as Health Officer. The unit was discontinued Jan. 1, 1933, because of lack of county funds.

JESSEN PRIZE TO DR. BURKHART

THE International Dental Federation, at its meeting at Lake Como, Italy, August 1–4, 1934, elected the following associate members of The Commission of Oral Hygiene:

Miss Neveu, Paris; Mr. Fabres, Nice; Mr. Seniot, London; and Mr. Krikos, Athens.

The Jessen Prize was awarded to Dr. Harvey J. Burkhart, of Rochester, N. Y., member A.P.H.A., to be presented at the 1935 meeting in Brussels.

DELTA OMEGA OFFICERS

AT the annual meeting of Delta Omega, the honorary public health society, held at the Hotel Maryland in Pasadena, September 6, 1934, there was an attendance of 39 from the six chapters and one honorary member, Dr. M. P. Ravenel. New officers elected were Professor Charles G. Hyde of California, President; Dr. Huntington Williams of Baltimore, Vice-President; and Dr. W. G. Smillie of Harvard, Secretary-Treasurer. The retiring President is Professor Ira V. Hiscock of Yale. It was voted to establish a new chapter at Columbia University. The present chapters are located in order of establishment at Johns Hopkins, Harvard, Massachusetts Institute of Technology, Michigan, Yale, and California. The membership of the Society is 515, including 9 honorary members.

MISSOURI WATER AND SEWERAGE CONFERENCE

THE Tenth Annual Missouri Water and Sewerage Conference will be held at Carthage, Mo., October 15 and 16.

DEATH

DEATH OF DR. HOLLINGWORTH

DR. Walter G. Hollingworth, of the Bureau of Health of Utica, N. Y., died September 2. He was a member of the Food and Nutrition Section of the A.P.H.A. from 1919, and became a Fellow in 1926.

PERSONALS

BERNARD S. COLEMAN, F.A.P.H.A., of Passaic, N. J., has been appointed Secretary of the Tuberculosis Division of the New York Tuberculosis and Health Association. Mr. Coleman was formerly deputy relief director of the New Jersey Emergency Relief Administration.

DR. WALTER L. BIERRING, of Des Moines, Ia., member A.P.H.A., was the guest of honor at a dinner September 4, at Los Angeles, Calif., sponsored by the Los Angeles County Medical Association.

CONFERENCES

Oct. 5–6, Fall Meeting, New York State Sewage Works Association, Oneonta, N. Y.

Oct. 8–10, Annual Meeting of the Association of Military Surgeons of the United States, Medical Field Service School, Carlisle Barracks, Pa.

Oct. 15–16, Tenth Annual Missouri Water and Sewerage Conference, Carthage, Mo.

Oct. 15–18, 17th Annual Meeting of the American Dietetic Association, Washington, D. C.

Oct. 15–19, American College of Surgeons, Boston, Mass.

Oct. 15–19, Annual Convention, New York State Nurses Association and its affiliated bodies, Buffalo, N. Y.

Nov. 2, Mid-Year Meeting of the New York State Association of Public Health Laboratories, at the State Laboratory, Albany, N. Y.

Nov. 13–16, Southern Medical Association, San Antonio, Tex.

Nov. 16, 17, 60th Anniversary Meeting, New Jersey Health and Sanitary Association, Berkeley-Carteret Hotel, Asbury Park, N. J.

Dec. 27–30, Annual Science Exhibition of the American Association for the Advancement of Science and Associated Societies, Pittsburgh, Pa.

April 29–May 3, 1935, 19th Annual Clinical Session of the American College of Physicians, Philadelphia, Pa.

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